

The Mining Journal.

RAILWAY AND COMMERCIAL GAZETTE:

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

[The MINING JOURNAL is Registered at the General Post Office as a Newspaper and for Transmission Abroad.]

No. 2374.—VOL. LI.

LONDON, SATURDAY, FEBRUARY 19, 1881.

[WITH SUPPLEMENT.] [PRICE SIXPENCE PER ANNUM, BY POST £1 4s]

MR. JAMES H. CROFTS, STOCK AND SHARE BROKER, AND MINING SHARE DEALER,
No. 1, FINCH LANE, CORNHILL, LONDON, E.C.
ESTABLISHED 1842.

BUSINESS transacted in all descriptions of MINING Stocks and Shares (British and Foreign), Consols, Bonds (Foreign and Colonial), Railways, Insurance, Assurance, Telegraph, Tramway, Shipping, Canal, Gas, Water, and Dock Shares, and all Miscellaneous Shares.

BUSINESS negotiated in Stocks and Shares not having a general market value.
Every Friday a general and reliable List issued (a copy of which will be forwarded regularly on application), containing closing prices of the week.

MINES INSPECTED.

BANKERS: CITY BANK, LONDON—SOUTH CORNWALL BANK, ST. AUUSTELL.

SPECIAL DEALINGS in the following, or part:—
30 Aberllyn, 11s. 3d.
50 Almaden, 9s. 9d.
75 Carnarvon Cop., 20s.
20 Chillingham, 24½.
20 Devon Consols, 14¼.
50 East Crebtor, 14s. 9d.
40 East Caradon, 11 17s 6.
50 E. Roman Grav., 14s.
30 East Van, 11 13s. 9d.
50 Flagstaff, 11 3s. 9d.
70 Frontino, 24 13s. 9d.
40 Glenrock, 11 13s. 9d.
50 Glenrov, 11s.
70 Grogwinion, 12 17s 6.
10 Herodsfoot, 17s. 6d.
20 Richmond, 26½.
10 Roman Grav., 10½.
20 Skerne, 27½.
25 So. Devon, 24 3s. 9d.
35 S. Indian Gold, 22 1 3.
10 So. Condurow, 10 8 9.
25 South Darren, 22 1 3.
50 So. E. Wynad, 21 12 6.
75 S. Penruthal, 10s.
60 Tanker. Gt. Con., 13s.
50 Trevinns Con., 21 5s.
100 United Van Consols and Glyn, 8s. 3d.
55 West Phoenix, 11 17 6.
30 Wheel Crebtor, 24 3 9.

* SHARES SOLD FOR FORWARD DELIVERY (ONE, TWO, OR THREE MONTHS) ON DEPOSIT OF TWENTY PER CENT.

SPECIAL BUSINESS in North D'eresby Mountain.

RAILWAYS—SPECIAL BUSINESS.

FOREIGN BONDS—SPECIAL BUSINESS.

AMERICAN STOCKS AND SHARES—SPECIAL BUSINESS.
Fortnightly accounts opened on receipt of the usual cover in these and all Stock Exchange Securities.

JAMES H. CROFTS, 1, FINCH LANE, LONDON.
ESTABLISHED 1842.

MR. W. H. BUMPUS, STOCK AND SHARE BROKER, AND MINING SHARE DEALER
44, THREADNEEDLE STREET, LONDON, E.C.
ESTABLISHED 1867.

BUSINESS transacted in STOCK EXCHANGE SECURITIES and MISCELLANEOUS SHARES of every description.
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TRAMWAYS, TELEGRAPHS, and all the LEADING INVESTMENTS.
Accounts opened for the Fortnightly Settlement
A List of Investments free on application.

Mr. BUMPUS has SPECIAL BUSINESS in the undermentioned:—
100 Almaden, 8s.
50 Arendal.
35 Blue Tent, 32s. 6d.
75 Bodidris.
100 Carnarvon, 14s. 6d.
5 Cape Copper.
40 Colarado, 22½.
20 Copiapo.
50 Callao Bis, 32s.
100 Canada Gold.
70 Devala-Moyar, 31s.
25 Derwent, 41s.
15 Devon Consols, 14¼.
50 Don Pedro, 13s. 3d.
3 Dolcoath, 25½.
20 East Caradon, 38s.
25 Eberhardt.
3 East Pool, 23½.
25 East Van, 39s. 6d.
40 Emma, 23 11s. 3d.
15 East Lovell.
100 English-Australian Gold, 28s. 6d.
25 Frontino, 25 1s. 3d.
75 Grey's Brewery, 24.
150 Glenrov, 12s. 6d.
20 Great Lacey.
20 Great Holway, 24½.
25 Gunnislake (Clitters), 24½.
40 Hington Down, 23s.
50 Huitafall, 32s. 6d.
100 Indian Glenrock, 33s.
150 Javali.
60 La Plata, 33s.
5 Missouri (Lead), 10½.
10 Mona, 21s.
50 No. Herodsfoot, 10s. 6d.
20 New Quebrada, 26 8s 9.
50 New Peavor, 22.

SPECIAL BUSINESS, at close prices, in the SHARES of all the principal HOME and FOREIGN MINES.
Mr. BUMPUS devotes special attention to these Securities, and is in a position to afford reliable information and advice to intending investors and others.

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AMERICAN SHARES AND BONDS.—Attention was recently called in "The Week" to Erie when at 39, to Readings at 16, and to Pennsylvania at 60. Despite the great advance still higher prices during 1881 may confidently be relied upon. Fifty shares of each, or any larger number may be secured for the account on receipt of the usual cover. New York Central and Illinois Central deserve attention.
Money is to be made by operating in Atlantic and Great Western Mortgage Bonds.

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BANKERS: LONDON AND WESTMINSTER, Lothbury; and BARCLAY, BEVAN, and CO., Lombard-street, E.C.

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50 Brazilian.
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100 Bedford United.
50 Birdseye Creek.
2 Carn Brea.
5 Devon Great Consols.
25 Don Pedro.
25 Derwent.
30 East Devon Consols.
50 Exchequer.
100 English-Australian.
60 East Chilverton.
40 East Van.
20 Frongoch.
40 Gawton.
50 Glenrov.
15 Grogwinion.
50 Glenrock.
75 Hungarian Copper.
50 I. X. L.
50 Indian Phoenix.
50 Lady Ashburton.
70 Llandegla.
20 Lead Era.
100 La Plata.
25 Marke Valley.
75 Mysore Reefs.
50 North D'eresby.
75 North Herodsfoot.
50 New Kitty.
50 Nouveau Monde.
40 Port Nigel.
20 Prince of Wales.
20 Paulicillo.
50 South Tolcarne.
50 South Devon.
10 Wheel Sisters.
65 Wheel Jewell.
50 West Phoenix.
100 West Caradon.
100 Wynad Perseverance.

SPECIAL BUSINESS in Frongoch, Grogwinion, Devon Great Consols, Gawton, Wheel Costes, Penhalls, New Kitty, Glenrov, Roman Gravels, Yatwith, South Devon, Bedford United, South Condurow, and South Devon.

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OLD BROAD STREET, LONDON, E.C.
BANKERS: THE ALLIANCE BANK (Limited).

MESSRS. PETER WATSON AND CO.'S
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—STOCK AND SHARE INVESTMENT NOTES—MINES,
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35 Almaden & Tiritio, 9s. 6
100 Bodidris, 11½.
50 Carn Camborne, 23½.
200 Cambrian.
100 Canada Gold, 11 1s 3d
3 Dolcoath, 25½.
40 Devonport and Tiverton Brewery, 24½.
100 Eberhardt (new company), 12s. 6d.
50 East Caradon, 11½.
20 East Craven Moor, 14s.
35 Flagstaff, 21½.
60 Grey's Brewery, 24½.
100 Herodsfoot, 14s.
20 Hington Down, 21 8 9
5 Mona, 213½.
35 Nouveau Monde, 21½
100 New Quebrada, 26½.
40 Port Phillip, 10s.
10 Union Trust, offered.
100 Wheel Jane, 14s.
75 West Phoenix, 21 11 3
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BWLOH UNITED.—Specially recommended.
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50 Brazilian Gold, 23s. 6d.
10 Bwch United.
30 Carn Camborne.
20 Carnarvon, 18s. 9d.
25 Colorado, 22 8s. 9d.
100 Chontales, 4s. 3d.
15 Consolidated, 10s. 6d.
15 Devon Gt. Uni., 22½.
60 Don Pedro Gold, 13s.
10 Devon Consols, 14¼.
20 English Australian Gold, 21½.
20 East Caradon, 11 18 9
50 Exchequer Gold, 5s. 3
15 East Lovell, 24 16s 3d
30 Ennra, 23½.
40 Frontino, 24 13s. 9d.
25 Grogwinion 22 15s.
20 Gunnislake (Clitters), 24 16s. 3d.
50 Hungarian Cop., 21s 3
50 I.X.L. Gold, 6s. 9d.
50 Javali, 6s.
10 Minera, 29 11s. 3d.
20 North Alfred.
50 Nouveau Monde, 21½
50 Parys Corp., 17s. 6d.
20 Panulicillo, 26½.
100 Pesterena, 9s. 9d.
75 Prince of Wales, 15s 6
40 Port Phillip, 10s. 3d.
25 Potol Gold, 21½.
20 South Devon, 24½.
25 Tamar Silver-Lead.
50 Vincent.
20 W. Chilverton, 10s.
20 West Crebtor, 8s. 9d.
20 West Lisburne.
20 West Phoenix, 21 16 3
20 Wheel Crebtor, 24½.

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ESTABLISHED 1852.

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Bankers—London and County Bank, Lombard-street, London, E.C.

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SUBAQUEOUS GOLD MINING.—A few days ago a schooner sailed from Bristol, R. I., laden with a small river steamer, a steam launch, and an outfit of mining machinery for working the auriferous bed of the Atrato river, South America. It is well known from the careful surveys made of the Atrato, in the interests of the proposed ship canal by that route, that the river sands in many places are rich in gold and platinum, and it is the purpose of the company which has sent out this expedition to work the river bed by a system of subaqueous hydraulic mining. In this way gold-bearing sand and gravel, at depths too great to be reached in the ordinary way, will be sucked up by steam machinery, and the precious metal separated by washing. The machinery, devised by Mr. Samuel S. Webber, was built by the Herreshoffs, at Bristol. The expedition appears to be well organised and capably officered. If it succeeds the venture is likely to be followed by similar assaults on other gold-bearing river beds whose wealth has been out of reach hitherto. The Atrato is the most westerly river which flows northward in South America. It drains a long reach of auriferous country and empties into the Gulf of Darien.

CLOSING OF THE LISTS. EAST WHEAL ROSE, LIMITED.

Notice is hereby given, that the SUBSCRIPTION LISTS for the shares of this company WILL CLOSE on SATURDAY NEXT, 19th inst., for LONDON, and on MONDAY, the 21st inst., for the COUNTRY.

SPECIAL ATTENTION is called to the fact that the Shares of the previous Company (£50 paid) close to £1800 each in the London Stock Exchange, and that the Company paid £2176 in Dividends on each Share.

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INCORPORATED UNDER THE COMPANIES ACTS, 1862 TO 1880, WHEREBY THE LIABILITY OF SHAREHOLDERS IS ABSOLUTELY LIMITED TO THE AMOUNT OF THEIR SHARES.

CAPITAL, £100,000, IN 100,000 SHARES OF £1 EACH,
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Applications for upwards of 30,000 Shares have already been received.

Payments as follows:—2s. on application, 3s. on allotment, and the remainder as required, in calls of not exceeding 2s. 6d. each, at intervals of not less than one month.

In the event of no allotment being made, amounts paid on application for Shares will be returned in full.

The Vendors guarantee a Dividend at the rate of 7 per cent. per annum for one year from date of Allotment of Shares on the paid-up capital (in order to give time to erect machinery and raise ore), depositing 10,000 Shares, part of the purchase money, in the hands of the Directors to cover their guarantee.

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SECRETARY (PRO TEM.)—Mr. WILLIAM MARR.

ENGINEERS—MATTHEW LOAM and SON, Liskeard, Cornwall.

REGISTERED OFFICES—17 AND 18, CORNHILL, LONDON, E.C.

PROSPECTUS.

This company is formed for the purpose of acquiring and working the extensive and valuable range of silver-lead lodes in the rich silver-lead district of Newlyn East, a few miles north of the city of Truro, Cornwall, and known as East Wheal Rose.

The property comprises the mining leases for about 21 years, at a royalty of 1-18th, of about 1000 acres of ground, which gives a run of about 1½ mile on the north and south lodes, and three-quarters of a mile on the east and west lodes. It is one of the richest and most extensive ranges of mineral ground in England. A branch of the Great Western Railway runs through the sett, from which sidings are already made, and these will be extended to the engine-houses and dressing-floors, thereby saving a large sum per annum in carriage.

The great value of the property may be judged from the fact that the former company raised and sold between £800,000 and £1,000,000 worth of ore from two of the eight lodes that intersect the property, and these two lodes have been wrought on for only a little more than one-third of their length. The shares of that company (£50 each) reached a market value of £1800, and, as will be seen by Capt. Doidge's report, annexed to this prospectus, the total dividends received by shareholders were £278,528 or £2176 dividends on each £50 share. This extended over a period of 13 years only.

The only reason why the mine ceased working is amply set forth in the several reports enclosed in the prospectus. It was that the manager spent the whole capital of the company trying to sink in the lode, the soft nature of which rendered this impracticable, instead of sinking in firm ground, or, as is known in mining parlance, "in the country."

It will be seen by the various reports accompanying the prospectus that the great mineral deposits are contained in eight lodes; four run north and south through the whole length of the sett for about 1½ mile, and are named respectively Middleton's lode, East lode, and two Parallel lodes; and four run east and west—viz., Long's lode, South Shepherd's lode, and two caunter or cross lodes.

The whole of these eight lodes have been proved rich in silver-lead, and from the working of only two of the north and south lodes, for half a mile in length, £800,000 to £1,000,000 worth of ore has been sold.

The enclosed surface plan of the property shows the extent of the ground operated upon (marked red). The remaining portion of these two lodes is nearly twice as long as that already worked. In addition to this there are the two Parallel lodes standing whole, numbered 1 and 2 on plan, which it is fair to assume will prove equally rich. If so, these four north and south lodes alone, without sinking a single fathom deeper, may fairly be estimated to contain reserves of over £2,000,000 worth of ore. Added to this there are the four cross lodes (see plan) running through the whole width of the sett, which at a very low estimate may be valued at £1,000,000 sterling, making a grand total of £3,000,000 worth of reserves above the 150 fm. level.

THE CENTRAL GROUND.

The Central Ground is about half-a-mile in length on the course of the four north and south lodes. Here the late Company confined their working to Middleton and East Lodes, and worked them from surface to the 150 fathom level. These two lodes produced over £800,000 worth of ore from about half-a-mile in length.

It is the intention of the Company to open up this ground, which it is confidently believed will be found of equal value to that taken away, for, as will be seen by the reports, the lode at the deepest point is as rich, if not richer, than in the shallower levels.

Capt. Skewis, the resident agent of the Mine, when the late Company ceased working, reports:—"The sinking of the shafts to continuous deeper levels, and their extension north and south under the old mine, will, according to the present state of the bottom of the Mine, lay open one of the largest and richest lead mines in the West of England." "Its riches commenced at surface, and continued

to the present depth for over half-a-mile in length in such abundance as to have no equal."

Capt. Doidge, who is intimately acquainted with the Mine, says:—"It is one continuous course of silver-lead."

Capt. John Phillips writes:—"I inspected and reported on the mine only nine months before the mine ceased working, so I have had every opportunity of knowing the mine well. At the time I inspected the mine the bottom levels were good, the ground was firmer, lodes firmer, lead richer and stronger, and not requiring half the timber—in fact, everything points to increased bodies of ore as depth is obtained."

Thomas Hoskins (a former worker in the mine):—"I, with others, drove the 150 fm. level; the lode was strong and masterly, 7 ft. wide, very good all the way and good in the bottom; will yield 3 to 4 tons of silver-lead per fathom."

Robert Odgers reports:—"I worked at the 150 fm. level at North Wheal Rose Engine-shaft. There were several splendid pitches working when the mine ceased working; the lode was from 6 to 9 ft. big, a regular lane of ore, and could not be better. I and another man in one night broke about 4 tons of lead."

From the above extracts of reports enclosed, there is every reason to believe that by continuing the mine below its present depth, some million pounds worth of ore will be laid open from this section of the ground alone, the bottom of the mine being equal in value to any of the shallower levels.

THE NORTH GROUND.

There is a run of about 300 fathoms on the lodes north of the old workings; this may be considered a good mine in itself, for the ground is to a great extent standing whole, and from the appended extracts it appears to be even more productive than the old workings.

Capt. Skewis reports of this ground:—"The returns from this mine, as well as I recollect, continued unabated to the very last, and particularly in the north part."

Capt. Doidge writes:—"At the north of the old mine, from North Wheal Rose shaft to the north boundary, there is a length of about 300 fathoms on the course of east and Middleton's lodes; and in this ground they unite and form one masterly lode."

Capt. Hooper reports:—"In the north part I worked in the 170, which is the deepest part of the mine. I can safely say in all my mining experience I never saw anything so rich as here. When the level was driven on course of the lode, 13 fms. north, a piece of ground was then let on tribute to stoep at one shilling in the pound. The men considered they broke 100 tons of silver-lead ore in about two or three days. This lode is still as rich as ever going below the 170, and I believe worth 20 tons per fathom of silver-lead ore."

The foregoing reports fully corroborate the opinion that the mine is richer as it deepens, and that the lode is immensely productive throughout its whole length. Capt. Hooper's estimate that it will yield 20 tons per fathom make it one of the most productive lodes known.

THE SOUTH GROUND.

This part of the present company's property has recently been added to the sett; it is about half a mile square, and contains the four north and south lodes before referred to, and, in addition, a long run on the cross lodes which traverse the whole breadth of the property. It is the opinion of many mining experts, besides those quoted below, that the South Ground is as valuable as either the Central or North Ground.

Captain Skewis reports:—"To the south of Penrose's shaft there is nearly half a mile of unexplored and, in my opinion, valuable lead ground. In fact, a splendid mine in itself."

Captain Doidge, referring to the caunter or cross lode, says:—"I have seen many lodes that have been very productive in rich mines (one especially which yielded over a million pounds worth of silver-lead), and I do not hesitate to say that it did not show such strong appearance at same depth as does this lode." "The length on this lode being about 700 fathoms."

Captain Hooper, writing of the south ground, says:—"One great feature, the shaft is sunk to the 150 fathom level, and is in good order, therefore almost as soon as you commence to drain the mine you can commence raising lead."

Captain Phillips reports:—"I have for 30 years contended that this is a splendid piece of ground, and I have not the least doubt will, when properly opened out, be found fully as rich as the ground in the old mine."

The company practically owns three mines, each of which is considered to be equal in value with the portion already worked, and which has returned more than £800,000 worth of ore.

It is estimated that when the mine is in full work 880 tons of lead per month can be returned. (See Phillips's Report.) Putting the total cost of production at not less than that under the former expensive system, say 6000, the result would be as follows:—

Sale of 800 tons per month, or 9600 tons per annum,	
at say £14 10s. per ton.....	£139,200
Deduct working and all other expenses—£6000 per month, or per annum	72,000

This would leave a net annual profit of £67,200

Or over 67 per cent. on the entire share capital of the company. But with the modern improvements in machinery and mode of working now in vogue, a very considerable increase in the above estimated profits will be secured.

In inviting applications for shares in East Wheal Rose, the directors believe that the shareholders will have an interest in one of the largest, richest, and most productive mines ever introduced to the notice of investors, and in a concern which will pay unusually large dividends for generations.

So certain are the vendors of the great value of the property that they have agreed with the company to guarantee that the dividend for the first year shall not be less than at the rate of 7 per cent. per annum on the capital paid up. This period, it is considered, will give sufficient time for erection of machinery to pump out the water, and other preliminary work; but as Capt. Hooper reports that "almost as soon as you can commence to drain the mine you can raise lead" the directors have every expectation that a larger dividend will be earned, and that it will not be necessary to call on the vendors for their guarantee.

The vendors are promoters of the company, by whom the purchase-money has been fixed at £40,000, of which £10,000 is to be paid in cash, and £30,000 in fully paid-up shares of the company, and the vendors undertake to defray all costs and expenses of agency, brokerage, advertising, printing, and all legal and other charges incidental to the formation of the company up to the allotment of shares.

The only contracts are—one dated the 9th of February, 1881, and made between Joseph Alexander, of the one part, and James Thomas Browne and Henry Browne, of the other part; and another dated the 10th February, 1881, and made between the said James Thomas Browne and Henry Browne, of the one part, and the company of the other part.

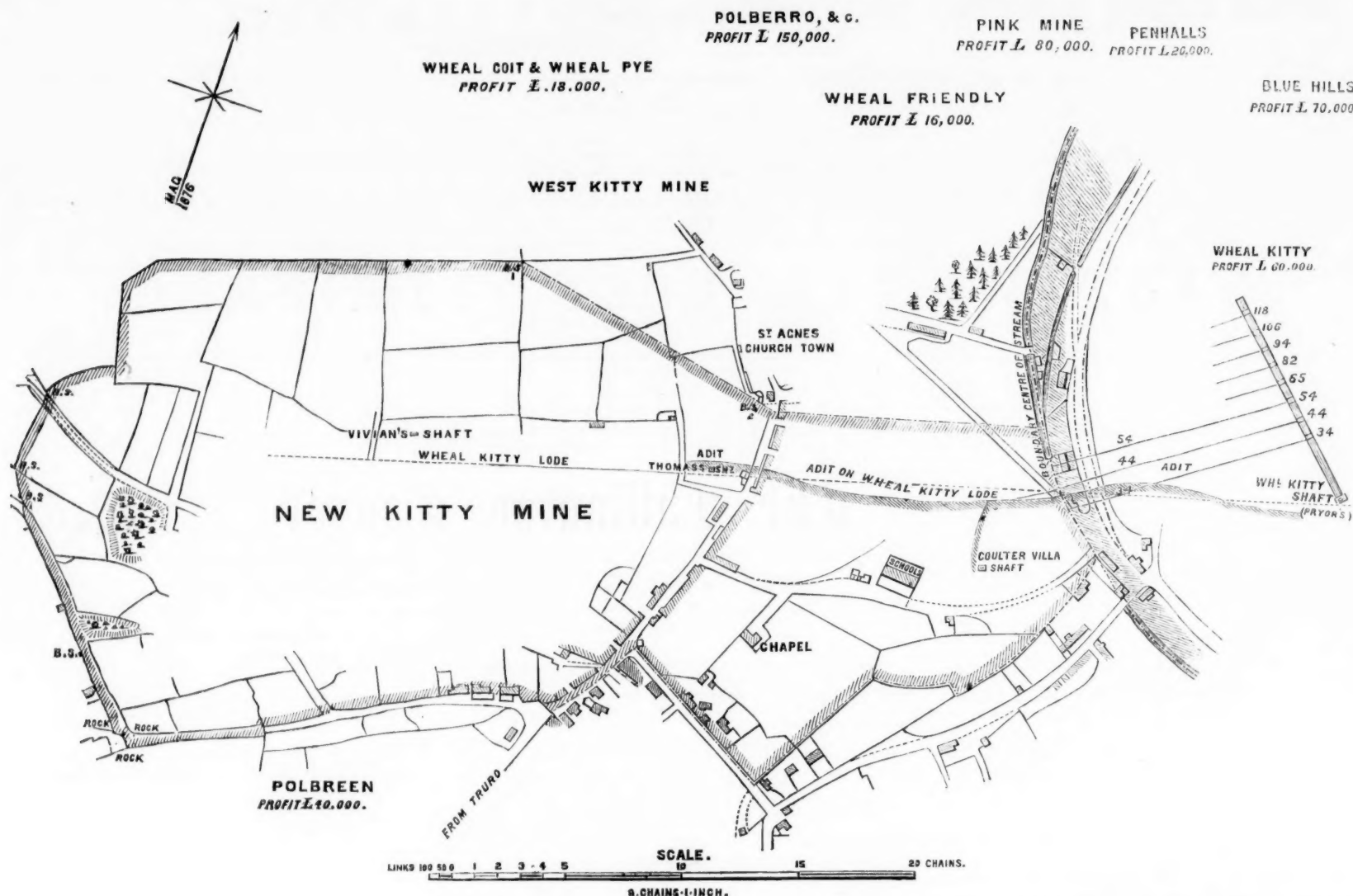
The accompanying plan shows the extensive surface area, the run on the lodes, and the intersections of the caunter or cross lodes; also a vertical section of the workings on one of the lodes. The several reports herewith enclosed contain fuller information than can be furnished in the body of a prospectus.

The contracts, Memorandum, and Articles of Association, reports and plan of the property, are open to inspection at the offices of the company, where further information may be obtained.

Prospectuses and forms of application can be had at the bankers, brokers, solicitors, or at the offices of the company.

It is intended to apply to the Committee of the Stock Exchange for an Official Quotation.

NEW KITTY MINE, ST. AGNES, CORNWALL.



NEW KITTY MINE.

We draw attention to this district, and the above plan is worthy of study. It is not the first time we have endeavoured to fix attention on first-class localities. That such a group should have had so little notice is suggestive of the apathy of the public until attention is called in a very pointed manner to those districts where mineral wealth is so abundant as in St. Agnes and the immediate vicinity. It will be remembered that some twelve months since we had the pleasure of presenting our readers with a plan of West Kitty. We purposely abstained from calling attention to any other property in proximity to it until West Kitty itself had more fully proved its title to public confidence. But directly the plan of West Kitty was published there was an eager rush for the shares. They advanced, we remember, from 20s. to 3½ in the course of a few weeks. Such a rise exhibited weak speculators who could not carry out their bargains, and a relapse occurred, only to be followed, however, in a period not exceeding twelve months by a buying current so strong as to place the shares almost at their old figure, and a market so tight as scarcely to admit of a share being bought at the quotation ruling. This state of things is caused by the gradual development of a property which is now so good as to be adding to its reserves of tin at the rate of 750l. per month, and a certain prospect at no distant date of entry into the Dividend List. We have no hesitation in saying that were the activity now in the mining market as great as it was twelve months ago West Kitty shares would be at 6l. each. But it is a sufficient justification for this article that from the facts of the case West Kitty is likely to rival its most prosperous neighbours, if it is not, indeed, already doing so.

Such being the fact, the discriminating eye of the public is being turned to the adjoining mine. For position it can scarcely be excelled. Called by the name of New Kitty it embraces more than one property of great worth. The addition of Wheal Harriett to the sett was a move of the executive of great foresight. That action, which cost the company about 50l., brings the boundary line of New Kitty close up to Wheal Kitty. That fact in itself stamps New Kitty as a valuable property, seeing that Wheal Kitty has paid 60,000l. in dividends, and that the stratification of both mines is pronounced by the practical authorities who have been consulted as being identical. And yet New Kitty shares are somewhat below 40s. each, or what is equivalent to 12,000l. for a mine which is likely to double in market value in 12 months. Do we say "double in market value?" In a comparatively short period Wheal Kitty shares went from almost a nominal price, as in this instance, to 16l., and paid 10l. per share in dividends! It is indeed a rare circumstance to be able to get into a mine adjoining such a rich neighbour, but a still greater rarity to find oneself so situated in a district which has never produced a failure.

During the week we have had a striking illustration (in South Devon, which advanced from 1½ to 6) of the great advantage of being connected with mines with good neighbours. Discoveries in

such properties proceed very often "by leaps and bounds," and no adverse criticism or prejudice can hinder their onward progress. With a resolute and wealthy company, such as the proprietors of New Kitty are, success would appear in this instance certain—why? Because, as was stated in this Journal last week, if New Kitty fails, then considering all the circumstances of the case, such failure will be the first on record.

If mining is to be still further raised in the estimation of the public shareholders must enter companies under favourable conditions. What are the conditions here? It will be admitted at once by all impartial judges that for a mine upon which 15,000l. has been spent, and in this advanced stage of development, 12,000l. can only remind one of cases in which from similar prices quotations have doubled or quadrupled in a week. The company has been carrying on business for some 12 months. Its work is conducted on the "no credit" system, which renders the liability of shareholders nil beyond that of their own incurring.

We have been favoured with a copy of the last official reports which have been received from the manager concerning West Kitty and New Kitty, and in comparing the report of the former with the statements published in these columns 12 months ago we cannot express any surprise at the progress of West Kitty. That they should have a lode near the 60 fm. level worth over 40l. per fathom, and that their ends going towards Wheal Kitty should be productive, cannot possibly be a matter of surprise.

We should not refer to West Kitty at all in this article but for its bearing on the prospects of the adjoining mine New Kitty, and it is necessary that the reader should carefully distinguish between these two mines. As was pointed out in the Journal last week, they are entirely distinct, and the limits in possession of the New Kitty Company have never been possessed by any previous company. We were hardly ready, however, for the statement of Capt. Vivian conveyed in his last official report respecting New Kitty to the effect that, "We may expect as good a mine in New Kitty as we have at West Kitty, and at a much shallower depth than we have it in West Kitty." Under ordinary circumstances such a statement might not be significant, but considering the gentleman who penned this sentence, and also taking into consideration the unquestionable and unquestioned value of West Kitty, we cannot help attaching the greatest importance to it. Capt. Vivian gives his reasons, and he founds those reasons on the appearance of the western part of West Kitty, where the lode is making straight for New Kitty; but he might have said much more if his desire was to give the New Kitty company encouragement. It must be remembered that the former proprietors of the Polbreen part of New Kitty made a profit of 40,000l. The question arises whether that part of the mine is exhausted, to say nothing of the other lodes which traverse the sett, which the agent does not mention. What the opinion of experts is may be gathered from the very detailed account of the meeting of shareholders before last, held on the mine. A better report and more succinct information we must admit never came under our notice.

Concerning the value of New Kitty there appears to be unanimity, and judging from the district and the extraordinary richness of the lodes, it would indeed be a matter of surprise if such unanimity did not exist. We cannot help drawing attention further to the publicity which is given to all the affairs of the company. It is stated with truth that they work on the "no credit system," but it may be stated with equal truth that they proceed on the "no concealment" principle. That the shares of the company are at a very low price and very little dealt in on the London market is but another indication of the confidence shareholders have in their undertaking. We have repeatedly pointed out that the price of a share is by no means indicative of its real value, and the longer our experience the more this fact is illustrated. When the real merits of a mine are proved by dividends, or by the near approach of dividends, the price of the shares proceeds with marvellous rapidity, and it is perfectly true that in such cases those persons who have not had the courage to become interested when the shares were at low quotations are disappointed in the result of their operations.

In giving this general review of the position of New Kitty Mine and the prospects of the company, let us express our gratification at the increased scientific knowledge brought to bear on mining districts generally. Nothing can be more satisfactory to the mining community than the energy and intelligence thrown into the development of the Devon Great Consols district, but the increasing energy displayed in the development of the St. Agnes district is none the less noteworthy, and if we forecast the future of New Kitty Mine aright we are mistaken if a greater future is not before it than was the case with former workers, and if this be so, or even if there is a probability of such being the case, New Kitty shares, instead of standing as they do at the nominal price of 1½ to 2, should have a *bona fide* market quotation of 5l. each at least.

In a work now before us we have an account of some of the results which have followed mining operations in the St. Agnes district. In this publication we find it reported that Trevaunance, a little spot of only 3½ acres, made a profit of 200,000l. This mine is about three minutes walk from New Kitty. It is clear that the stratification of New Kitty is the mineral-bearing stratification of the district. Taking this fact alone, apart from all other considerations set forth in this article, New Kitty shares should be commanding far above cent. per cent. of their present value even as a speculation, and should New Kitty become anything near as rich as its most prosperous neighbours there can be no denial of the fact that the shares would be cheap at 15l. each. That such improvements have taken place over and over again in the past is a matter of history, and we cannot too strongly impress upon the readers of this article the necessity, if they wish to be fortunate in mining, of promoting its interests in such a locality as this.

Business in these shares can be expeditiously and safely transacted by buyers and sellers at the offices of Mr. John B. Reynolds, 37, Walbrook, London, E.C.

THE MINING LAWS OF NEW MEXICO.

As English capitalists will be called upon, it is said, at no distant period to give their support for the development of the immense mineral wealth of New Mexico, an account of the mining laws in force there will not be uninteresting. The mining laws of New Mexico are, says the New Mexican Miner, simpler than those of any other State or Territory in the Union. By them only one record is necessary. If the claim is filed in the Recorder's office of the county in which the property is situated the title is perfect, and to learn all about the claims in a county a man has but to go to the Recorder's office. The first section enacts that any person desiring to locate a mining claim upon a vein or lode of quartz or other rock in a place bearing gold, silver, cinnabar, lead, tin, copper, or other valuable deposit, must distinctly mark the location on the ground, so that its boundaries may be readily traced, and post in some conspicuous place on such location a notice in writing stating thereon the name of the locator, his intention to locate the mining claim, giving a description thereof by reference to some natural object or permanent monument as will identify the claim, and also, within three months after posting such notice, cause to be recorded a copy thereof in the office of the Recorder of the county in which the notice is posted. No other record of such notice is necessary.

In order to carry out the intention of the preceding section it is

made the duty of the probate judges of the several counties of the territory to provide, at the expense of their respective counties, such books as may be necessary and suitable in which to enter the record hereinbefore provided for. The fee for recording such notice is fixed at 10 cents for every 100 words. The third section is equally liberal, since it enacts that in estimating the worth of labour required to be performed upon any mining claim, to hold the same by the laws of the United States in the regulation of mines, the value of a day's labour is fixed at \$4, and that in the sense of this statute eight hours of labour actually performed upon the mining claim shall constitute a day's labour. The next provision is that all locations heretofore made in good faith to which there shall be no adverse claims, the certificate of which locations have been or may be filed for record and recorded in the Recorder's office of the county where the location is made within six months after the passage of this Act, are hereby confirmed and made valid. But where there may appear to be any such adverse claim the said locations shall be held to be the property of the person having the superior title or claim, according to the laws in force at the time of the making of the said locations. The fifth section provides that an action of ejectment will lie for the recovery of the possession of a mining claim, as well as of any real estate, where the party suing has been wrongfully ousted from the possession thereof, and the possession wrong-

fully detained. The remaining sections simply repeal the Acts in force before January, 1876, and give the present Act immediate force, so that further reference to them is unnecessary.

IRISH IRON ORES.—Notwithstanding the disturbed state of some parts of Ireland, we are glad to learn that large quantities of iron ore are being peaceably and regularly shipped from the North of Ireland to this country and America. Some little time since we visited one of those undertakings which so largely conduce to the prosperity of the district—the Evishacrow Mines, near Ballymena, belonging to Mr. Charles Chambers, of Westminster, whose agents for the ore are Messrs. Henry Hughes and Co., of Gracechurch-street, London. The Evishacrow ore contains about 43 per cent. of metallic iron, and is of singular purity, having no trace of either sulphur or phosphorus. This class of ore is being extensively used in steel-making. These mines are connected by a branch with the Ballymena, Cushendall, and Red Bay Railway, which enables the ore to be sent either to Belfast or Larne for shipment. The latter port, which is well known as one of the safest harbours in Ireland, has been made accessible during the last few months by the completion of the Ballymena and Larne Railway—which, we understand, was originated by Mr. James Chaine, M.P. for the county of Antrim. A considerable quantity of Evishacrow ore is shipped at Larne.—*Iron.*

Lectures on Practical Mining in Germany.

CLAUSTHAL MINING SCHOOL NOTES—No. CLXIX.*

BY J. CLARK JEFFERSON, A.R.S.M., WH. SC.,

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GENERAL THEORY OF PISTON VENTILATORS.

The following particulars of the Guibal ventilator at the colliery belonging to Baron Rothschild at Mœhr Ostrau, is given in the Austrian Zeitschrift für Berg und Huttenwesen. The exterior diameter is 29 ft. There are eight vanes, each 10 ft. long. The inlet opening to the ventilator has an area of 81 square feet. The ventilator is driven by a 75-horse power steam-engine, and with 44 to 47 revolutions per minute exhausts from 55,000 to 60,000 cubic feet per minute. When driven at a maximum speed of 60 revolutions per minute the ventilator is capable of exhausting 80,000 cubic feet per minute. The water-gauge reading at the inlet opening of the fan being in the two cases respectively 1.3 in. and 1.9 in. Experiments were made with regard to the size of the inlet opening, and the best results were obtained with a size of 33 square feet. The largest ventilator yet put up is, perhaps, that in the Hilda Colliery, which is 50 ft. exterior diameter and 12 ft. wide. With 36 revolutions per minute, and a water-gauge reading of 2.63 in., this ventilator exhausts from 110,000 to 120,000 cubic feet per minute, the useful effect being given at 46 per cent. One of the first erected in this country to test the efficiency of the Guibal ventilator is that at the Unsworth Colliery, near Newcastle. This ventilator is 45 ft. outside diameter, 12 ft. broad, and has 10 vanes. With 40 revolutions per minute, and a water-gauge reading of 2.8 in., 147,000 cubic feet of air are exhausted per minute. The useful effect of a Guibal ventilator is given as varying from 40 to 60 per cent. Von Hauer remarks that these results are open to great doubt, since the Rittinger ventilator, which is similar in construction, gives only from 25 to 30 per cent. The width of most examples erected of the Guibal ventilator is too great compared with the diameter, and the circular form of the casing appears to be disadvantageous, since the air can only escape from between the vanes during the time it passes the exit opening to the chimney, and portions of the air after they arrive at the circumference are dragged round three-fourths of the circumference before they can find an exit. This disadvantage is, however, partly counterbalanced by the fact that the circular form fitting pretty closely to the outside of the fan prevents any back currents between the vanes, which often occurs when the fan delivers direct into the air, or is enclosed in a spiral casing which enlarges too rapidly. The simplicity of construction, and the high effect obtained (which is only exceeded by Fabry's, Root's, and Lemielle's ventilators, when water-gauge readings above 2.5 in. are required), have rapidly brought the Guibal ventilator to the first place among ventilating machines.

RITTINGER'S VENTILATOR.—This ventilator possesses similarity to Guibal's, and may perhaps be looked upon as a Guibal ventilator constructed in accordance with theory. The examples as yet put up hardly allow of a decisive comparison being made between the two. The following are the requirements as indicated by theory, which are intended to be met with in the construction of Rittinger's centrifugal ventilator. The air passage from the mouth of the upcast shaft and the entrance to the ventilator are constructed of such shape and dimensions that the velocity of the air current is not altered in entering the ventilator. The radius of the circle described by the inner ends of the vanes, and the breadth of the vanes, are such that the air does not change its velocity on entering between the vanes. In order to avoid a sudden change of direction of the air as it enters between the vanes (that there shall be no shock caused by the vanes striking the air) the inner ends of the vanes are formed to meet the circle described by their inner ends at a suitable angle. The outer ends of the vanes terminate radially, this having been demonstrated by Rittinger as the proper form for causing the air to leave the ventilator with the least velocity. In order that the change of direction and velocity in passing through the vanes shall be gradual the vanes are curved, forming arcs of circles; and for the same purpose it is not advisable to make the difference between the inner and outer diameters (the length of the vanes) too short. In accordance with the above the following rules are given for the design of Rittinger's centrifugal ventilator.* The inner diameter of the ventilator is equal to 1.13 times the square root of the quotient obtained by dividing the amount of ventilation per second by the velocity of the air in the entrance to the ventilator. The breadth of the vanes, taken parallel to the axis of the ventilator, is equal to one-fourth the inner diameter of the ventilator. The number of revolutions per minute is equal to the square root of the difference of the effective water-gauge readings at the entrance to and exit from the ventilator multiplied by 845, and divided by the exterior radius of the ventilator. From several experiments it has been found that the number 845 requires to be multiplied by a co-efficient for different readings of the water-gauge. For 0.04 meter (or 1.6 in.) the co-efficient is 1.7, and for 0.48 meter (or 3.2 in.) the co-efficient is 1.3 in. The tangent of the angle between the inner portion of a vane and a radius drawn through its inner end is equal to 0.0019 times the number of revolutions per minute multiplied by the amount of ventilation per second. The radius of the circle of which the vanes form arcs are obtained by dividing the difference of the squares of the inner and outer radii of the ventilator by the product of the inner diameter into the sine of the angle given by the last rule. The number of vanes is equal to 15 times the inner diameter expressed in meters.

Under the term "effective water-gauge reading" is meant the sum of the water-gauge depression, plus the head corresponding to the velocity of the air, in the one case on entering the fan, and in the other case on leaving the fan. Usually only the necessary water-gauge depression is given, and from this and the velocities of entrance and exit the above effective water-gauge readings are calculated. It is not necessary to take the water-gauge reading close to the outer circumference of the ventilator, since the effective pressure of a fluid passing through a space of gradually varying section, such as the diffuser of Rittinger's ventilator, is not thereby altered, and consequently the effective head at the outside circumference of the fan may be taken as equal to the effective head taken near the outlet of the diffuser. At this place the water-gauge depression is zero, and the effective head here corresponds solely to the velocity of exit. By a suitable design and size of the diffuser this velocity may be kept below any given maximum, and consequently the loss of effect reduced on this account to a minimum.

The outside diameter of the diffuser should be equal to the outside diameter of the ventilator, multiplied by the quotient of the velocity of air at the outer circumference of the fan, divided by the velocity of the air at the circumference of the diffuser.

From the rule given for finding the number of revolutions of the ventilator per minute it will be seen that this depends on the outside diameter of the ventilator, so that by increasing the diameter of the ventilator the number of revolutions per minute required for a given amount of ventilation is correspondingly reduced. The tendency of opinion and practice is to reduce the number of revolutions per minute to a minimum, by increasing the diameter of the ventilator; simplicity of construction, direct driving from the engine, minimum liability to a break down, and the possibility of increasing the amount of ventilation without unduly increasing the speed of the ventilator being considered of more importance than first cost.

The following are the dimensions of a Rittinger ventilator, calculated according to the above rules, for a ventilation of 20,000 cubic feet per minute, with a water-gauge reading of 1.6 in., and a velocity in the upcast shaft of 30 ft. per second. Diameter of circle described by the inner ends of the vanes 3 ft. 6 in. Diameter of circle described by the outer ends of the vanes 6 ft. Size of vanes 10 in. wide

by 15 in. deep. Number of revolutions per minute 300. The angle included between the inner portions of the vanes and a radius passing through the inner end of the vane 60°. Outside diameter of diffuser 17 ft. 6 in. No. of vanes 24.

SOUTH WALES ANTHRACITE, AND THE LONDON SMOKE NUISANCE.

That with suitable modifications in our domestic fire-places anthracite could be burned in the Metropolis with equal advantage to the denizens of London and the coal producers of South Wales has frequently been urged, and there now really seems to be a probability of the matter being taken up in earnest. Referring to anthracite coal as a preventive of the London smoke nuisance, the New York Engineering and Mining Journal says that at last two great centres are likely to break from a lethargic slumber, and shake hands over a new industry, to the great benefit and satisfaction of each other. London has from time immemorial been periodically troubled with smoke-fogs, and South Wales has from a still earlier period been in possession of the purest anthracite coal, to get rid of which remuneratively has been a problem to solve. The use of this smokeless coal for the suppression of the smoke nuisance in the Metropolis has at last excited the attention of colliery owners in Wales and of the authorities and consumers in London, and influential meetings have been held at both places for the purpose of affording information in respect to the use of anthracite coal for domestic and general purposes. By permission of the authorities an exhibition of smokeless fuel, and of stoves, gates, and other appliances for the use of anthracite will be held at South Kensington.

This matter has been largely brought about by the National Health Society, a purely philanthropic organisation, having the Duke of Westminster as its president, and numbering among its patrons and subscribers members of the Royal Family and some of the leading scientific men of the day. The result of their investigations went to show that unconsumed carbon up to a certain point was not injurious to health, but that after a certain point it became actually poisonous. The remedy was in the hands of South Wales. At a meeting recently held at Swansea, South Wales, under the presidency of the Chairman of the Anthracite Coalowners' Association, resolutions were passed to the following effect:—"With a view to anthracite coal being tested by experts in London, to be appointed by the Fog and Smoke Committee, in connection with the National Health and 'Kyrle' societies, this meeting desires that a local committee be started to obtain subscriptions in addition to those already promised, and that a subscription list be opened accordingly. That this meeting is fully convinced that the only successful remedy for the great nuisance so frequently occurring in the Metropolis, to the injury of health, and the consequent death of thousands of the inhabitants, is the use of anthracite smokeless coal."

The main reason why Welsh anthracite coal has not been more used in England heretofore is that the change of grates, stoves, furnaces, draught necessary, &c., for its proper consumption has not been adopted, a matter well understood on this side of the Atlantic. A large portion of the Welsh anthracite coal is of great purity, and has the advantage of a flame, which the American article lacks, but it is generally very brittle, and will not, excepting at great loss by slack, bear the sizing process used there. Now that the movement has been fairly made these details will soon adjust themselves.

THESE IMPORTANT AND EXTENSIVE MINES ARE SITUATED ON THE SLOPE OF KIT HILL, ADJOINING THE TOWN OF CALLINGTON, CORNWALL.

The Callington Consols (Limited).

Incorporated, with limited liability, under the Companies Acts, 1862, 1867, 1877, and 1880.

CAPITAL, £50,000, IN 25,000 SHARES OF £2 EACH.

1s. to be paid upon application, 2s. 6d. upon allotment, and the balance at intervals as may be required. Should no allotment be made, the application money will be returned in full.

The mines of this company have been acquired, after special surveys have been made by the following practical and scientific mining advisers, having, moreover, a knowledge of the lodes in the district:—

Capt. Richard Goldsworthy, Resident Agent of the Bedford United Mines, Tavistock, writes:—

"From frequent underground inspections, I can confidently recommend these mines to any company as offering much more than ordinary promise. Indeed, it would be difficult to find another mining grant with so many probabilities in favour of success."

Capt. John Daw, of the Devon Friendship Mines, writes:—

"These mines are in a splendid mining ground, and in my opinion they cannot fail to yield large returns of tin and copper that will leave a good profit."

Capt. George Rowe, Manager of the Wheal Crebor and other mines, writes:—

"This most eligible mining property is situated in one of the best mining localities of the county of Cornwall, and surrounded by great

mineral deposits. . . I have no hesitation in saying that you having nothing to fear as regards finding ore in sufficient quantities to ensure permanently large returns and dividends."

Mr. George Henwood, one of the oldest and most competent mining authorities of the day, also writes, under date 10th December last:—

"I say, as a whole, these lodes are second to none in Cornwall, and that in the Pengelly grant a great and rich silver mine is to be soon opened out."

"As regards the Wheal Florence and the Wheal Tonkin Mines, I have simply to say that they cannot be deemed speculative. They can be rendered remunerative forthwith. So convinced am I of the great value of these mines (the whole of the unavoidable preliminary deadwork of mining having been done, and the machinery, buildings, &c., erected, necessitating a large expenditure), that I shall unhesitatingly and very strongly advise my friends to take shares in the Callington Consols."

DIRECTORS.

THOMAS EYRE FOAKES, Esq. (Chairman of the Frontino and Bolivian (South American) Gold Mining Company (Limited), Chairman, The Priory, West Moulsey, Surrey.

CHARLES H. WILKINSON, Esq. (Britannia Mills, Leeds), Director of the Silver Peak Mining Company (Limited).

WALTER STRICKLAND, Esq. (Director of the Harewood Great Consols Mining Company (Limited), 110, Cannon-street, London, E.C. (With power to add to their number.)

RANKERS—Messrs. DIMSDALE, FOWLER, BARNARD, and DIMSDALE, 50, Cornhill, London, E.C.

ENGINEERS—Messrs. LOAM and SON, Liskeard, Cornwall.

AUDITORS—Messrs. JOHN B. BALL and Co., 1, Gresham Buildings, E.C.

BROKERS—Messrs. JOHN GIBBS, HART, and LANE, 51, Threadneedle-street, E.C.

SOLICITOR—J. W. SHARPE, Esq., 11, Queen Victoria-street, E.C.

SECRETARY—W. J. COCK, Esq.

REGISTERED OFFICES—4, GREAT WINCHESTER STREET, LONDON, E.C.

ABRIDGED PROSPECTUS.

The object of this company is to purchase and work the several well-known and very extensive silver, tin, copper, and lead lodes, comprised within the Florence, the Tonkin, and the Pengelly grants, on the slope of Kit Hill, adjoining the town of Callington, in Cornwall. Some of the lodes have already been tested at much cost, and have been proved beyond question to be very valuable. It is now proposed to open them out in the most judicious and vigorous manner, and on a scale commensurate with their extent, and undoubtedly great productive power.

It has been proved by experience that mines worked even on a limited scale, and to shallow depths only, when consolidated and worked vigorously with adequate capital have given very profitable results. The directors, therefore, confidently anticipate that the Callington Mines, on which a large amount of capital has already been expended in plant, machinery, buildings, &c., will realise a great and early success.

These mines also command great advantages in regard to position, being close to the East Cornwall Minerals Railway, and only about four miles from the Calstock Quay, where the River Tamar is navigable for ships of considerable burthen, thus ensuring cheap carriage of materials and produce to and from the mines.

There are within the company's grants no less than six well-defined lodes, comprising silver, copper, tin, lead, and mundic, which is very

important, as the company's success will not, as in some mines, be dependent on the produce of one lode only.

The above extracts from the reports of experienced and very able mining authorities, having also a special knowledge of the lodes of the district in question, irresistibly lead to the conclusion that the Callington Consols Mines will soon be very prominently before the mining world as some of the richest in Cornwall. The reports, *in extenso*, should be attentively read in order to understand their due importance, and to become fully cognisant of the unquestionably great value of these mines.

The mines are held under leases from the freeholders for 21 years from the 25th December, 1880, at dead rentals of £60 per annum, which chiefly merges in the very moderate royalty of 1-20th.

The machinery now on these properties includes, amongst other things, a 25-in. cylinder rotary engine, with Cornish boiler and fittings complete, a first-class Cornish crusher, with fittings and crusher-house, and hauling-machine, with connections all complete. The necessary pitwork, including pumps, &c., are still in two of the shafts. There are also main-rods connected with this machinery for working other parts of the mine. In addition to the engine and crusher house, there are account-house, smiths' shop, carpenters' shop, drying-house, material-house, extensive dressing-floors, &c.

Full prospectuses and forms of application for shares may be obtained at the offices of the company, 4, Great Winchester-street, London, E.C.

East Devon Consols Copper Mine

(LIMITED).

CAPITAL £30,000, IN 15,000 SHARES OF £2 EACH.

THE FOLLOWING IS A COPY OF A REPORT BY CAPTAIN JOHN KENDALL, M.E.:—

The above mining property is situated in the parish of Buckfastleigh, in the county of Devon, and is distant about two miles from the railway station.

It is a very extensive sett, and adjoins on the east the Brookwood and Wheal Emma Mines (now re-named South Devon United). The said mines have been very rich, and are now producing large quantities of copper ore, and I find from last report of same that the discovery recently made and all their most valuable points are east, towards this the East Devon Consols Mine.

Three east and west lodes have been seen, but as yet only one has been developed.

The present operations are chiefly on the east part of the property at the base of the hill, and from this point an adit or drain level has been driven into the hill on the course of the lode 40 fms. west. The lode in the forebrest is at present disordered, but has the appearance of again shortly resuming its former favourable character. The depth from surface to this point is about 8 fms., and this depth will increase about 2 ft. for 6 ft. of drive.

In the aforesaid 40 fms. drive the lode at several points is 4 ft.

wide, composed of quartz, mundic, black, grey, and yellow copper ore, and presents most favourable indications for a great deposit of copper ore in depth.

There are several tons of the lode at surface containing good quality ore and gossan, similar in character to that which is often found above rich and large deposits of ore in other mines.

What is now required (and which can be effected at comparatively little cost) is to sink a shaft—say, 10 to 20 fms. on the lode, and there will then be a great chance of making a valuable discovery of copper ore.

Near the mine there are two streams of water, which is a great advantage, as by the aid of same much necessary work can be accomplished in developing the mine and rendering the ore marketable.

I was well pleased with the prospects of the mine, and would remark that it is seldom a lode of so promising a character fails to be remunerative when properly developed, JOHN KENDALL.

London, 18th January, 1881.

As the end is being continued into the hill, a very important discovery may at any moment be made.

Applications for Shares should at once be sent to—

CARTER AND CO., 8, Union Court, Old Broad Street, London.

* Being Notes on a Course of Lectures on Mining, delivered by Herr Berggrath Dr. VOX GRODDECK, Director of the Royal Bergakademie, Clausthal, The Harz North Germany.

* Von Hauer, Ventilationsmaschinen.

BRITISH MINES.

ground. All other bargains are without any change to notice since last reported. Hauling and dressing going on with all possible energy, and we purpose sampling 20 tons of silver-lead ore next week.

NEW KITTY.—Wm. Vivian, Feb. 15: I beg to hand you the following report of this mine. I am sorry to say our work has been very much delayed for the last few weeks. The masons have not done more than a fortnight's work; but I am glad to say the engine-house is put up at last. The engineers will commence to-morrow to put in the engine. The prospects of the mine have improved in the past month. As the improvement in the western part of West Kitty is coming towards New Kitty we may expect as good a mine as we have at West Kitty, and at a much shallower depth than we have it in West Kitty. I consider the prospects of the mine very encouraging.

Feb. 17: The engineers have commenced to put in the engine. The pit-work is ready to put down. The prospects of the mine have improved, seeing there is a very promising lode at West Kitty coming towards this mine.

NEW WEST CARADON.—N. Richards, Feb. 16: In my last week's report I stated that we had suspended the opening out on the branch or lode (for it is fully 1 ft. wide) in the cross-cut south at Hallett's shaft, and placed the men to work on the cross-cut south towards the other lodes; after driving about 5 or 6 ft. we intersected what I believe to be the main part of the little north lode, it is 1 ft. wide, composed of quartz and fluor-spar mixed with yellow copper ore, and a more or less district; this lode no doubt was split by the cross course, and in all probability will form a junction again when driven away from the influence of same, when I fully expect to get a good lode, if not a course of ore. We have a long run of unwrought ground both east and west of this point, and seeing we have several other lodes to cut, and all in virgin ground, I think we may reasonably calculate in opening up a good and lasting mine.

NORTHERN.—T. Tonkin, Feb. 17: I have commenced to drive both east and west from the 6th shaft in the Quarry Hazel sill above the 42 level, and in both ends there is a strong lode 5 ft. wide, composed of calcite and fluor spar. The east section in west section yields 15 cwt. of ore to the fathom, and the drive into east section 10 cwt. of ore to the fathom. The winze sinking at No. 10, east section, 25 level, is making a little water, and the lode is as favourable as before. The yield of ore is 20 cwt. to the fathom. The tribute ground, east section, yields 12 cwt. of ore to the fathom in easy ground. The tribute ground, west section, is also looking well, the yield same as last week, 25 cwt. of ore to the fathom. These levels are in a strong lode 5 ft. wide. The yield of ore is 8 cwt. to the fathom. The stope above the 15, east section, are poor at present. The cross-cut for side lode is now in hard limestone on the east side, and on the west is a soft manganiferous gossan. We expect to reach the lode soon. There is no change to notice in the stope and drives above the adit level. The yield of ore is about 8 cwt. to the fathom. The weather is milder than for some time past, though we have yet a heavy cover of snow on the ground. Dressing is being pushed forward as fast as circumstances will admit.

NORTH D'ERESBY MOUNTAIN.—R. H. Vivian, Feb. 17: The No. 2 men have this week been wheeling from the No. 1 much richer stuff for lead ore than any we have hitherto brought to surface; all this ore has been broken from the lode in the shaft, where it is 12 ft. wide, and ore throughout. Judging from the appearance of the part we are now working on, on the hanging side of the lode bringing down the shaft to the No. 1, leads me to believe we shall have a good lode as soon as we can sink under this level.

NORTH HERODSFORD.—E. H. Hodge, Feb. 17: We have no change in the 50 or 60 during the last week. The men continue to make fair progress in clearing the same. We have laid a tramroad in the 80 west level, and purpose doing the same at the 50 as soon as we can get the wagon, &c., ready to go down. We have commenced jiggling the stuff from the burrows, and the results up to the present time are very satisfactory. I think the part of the burrow we have started is a very fair average of the whole; if this proves true a substantial profit will be derived from this source, especially when we have more extensive and sufficient jiggling machinery. Our men were hindered on Monday and Tuesday in consequence of the rain, but are now working again now.

OKEL TOR.—H. R. Rodda, Feb. 17: We have cut into the lode west at the 80 about 4 ft., and find it to be very good for arsenical ore. As soon as we reach the north wall of the lode a rise will be put up to meet winze coming down from the 65, and when the communication is made—say in two months hence—we shall have a splendid piece of ore ground opened up in the western part of the mine. During the past week we have been opening on the north lode left standing in the north side of the 65, west of the footway winze, for some 40 or 50 fathoms in length, where cut into we find the lode to be worth 16 tons of arsenical ore per fathom, and producing good quality of copper ore, and we believe the lode to be equally good for the whole distance. Next week a full report will be forwarded.

PANDORA.—H. Nottingham, Feb. 16: I have nothing new to report this week. The ends are not at all valuations. The shaftmen are at present employed tramming and clearing out the accumulated stuff we have lying underground. We have enough for a fortnight's crushing yet. The weather, I am glad to say, has become more settled, and we are now making fair speed on the dressing floors. I hope to sample 20 tons of lead and 20 tons of blende next week.

PAN-Y-MWY.—E. H. Hodge, Feb. 17: No change to report this week in the 22, west of Modlyn shaft. There is a good pitch in the back of the 12 west, and close to Modlyn shaft; worth 1½ ton per fathom. The 10, west of Griffith's, is going forward in a lode of splendid character, and yielding about ½ ton per fathom—in soft ground. A pitch in the back of this level, close to the end, is worth fully 2 tons per fathom.

PARYS.—T. Mitchell, Feb. 16: The 90 cross-cut south is in similar ground as when last reported. We have passed through several small veins of sulphur and copper lately. The rise in the 90 is yielding at present about 1 ton of copper ore per fathom, though the yield is rather small at this point, as the ground about this place presents a promising appearance. The winze in bottom of the 90 cross-cut will yield near 3 tons of copper ore per fathom; we find this last day or so more sulphur coming into the lode, and the ground rather hard for cutting. The end driving east of cross-course on Carreg-doll lode will yield at present 1½ ton of copper ore per fathom, and we hope as this end gets away from the influence of the cross-course it will improve. The trial driving at the 50, east of Griffith's, is producing a little ore, about 1 ton per fathom, and opening up tribute ground; we expected to have met with good bunch of ore here, judging from the productive ground worked away at the various levels over this place. The pitches are looking much as usual. We have about 160 tons of copper ore nearly ready for crushing.

PATELEY BRIDGE.—D. Williams, Feb. 17: In the main cross-cut, in the 30, we have intersected and passed through two branches of spar about 6 in. apart, carrying a small loader of solid lead ore on the hanging-wall. I have placed the men to drive north upon the lode, and to reach the run of rich ore-bearing ground provided the winze below the 20 above. We have two stope in the back of the 30, east of Rake shaft, wrought respectively at 95s. and 100s. per ton of dressed ore. The 20 north, upon No. 3 vein, is in from the cross-cut 6 fms. 3 ft. in a lode 2½ ft. wide, and producing sulphate of barytes, spar, and lead ore, worth 20 cwt. per fathom; set for the month at 10s. per fathom, and 80s. per ton of dressed ore. A stope in the back of the level, in a lode 2 ft. wide, and producing 15 cwt. of lead ore per fathom; wrought at 70s. per ton of dressed ore. In the slant cross-cut, below the 20, the vein is 1½ ft. wide, worth 16 cwt. of lead ore per fathom; wrought at 80s. per ton of dressed ore. The winze in course of sinking below the 20, at a point 6 fathoms south of the cross-cut, is down 4 fathoms; some idea of the productiveness of the lode here may be formed from the fact that four men have raised and dressed during the past month no less than 6 tons of lead ore, and 12 tons of copper ore. The lode is now being worked in the repair the flues of chimneys leading from our boilers to surface, as well as the main levels in the western part of our mine. Our machinery throughout the mine is in excellent order, and doing good duty. We have sold another parcel of pig-lead, and have another 20 tons in course of smelting. With our improved prospects I anticipate an increase in our output this month.

PENHALLS.—S. Bennetts, R. Harris, Feb. 12: The lode in the rise at the 80 is worth 10s. per fathom. The 70 east is poor. The 60 east is worth 12s. per fathom. The 55 level east is producing low quality tin stuff. The 50 west is worth 6s. per fathom; and the 45 west 7s. per fathom.

PENNANT.—J. Kemp, Feb. 17: The 80 has been producing some splendid lumps of lead ore, and is entering a most productive channel of ground. All the stope look well, and we are in full work on surface in dressing up the piles of mineral.

PEN-YR-ORSEDD.—G. Bellis, R. Prince, Feb. 17: The 150 cross-cut north is being urged forward by a full complement of men (nine), and is now within 10 yards of intersecting the middle lode. We are convinced that when this lode is struck it will be a most productive one. The 150 south cross-cut is also going north and day; splendid points of spar are crossing the end, and two, if not three, veins will be reached by this operation. We shall now very shortly resume the driving of the 122 cross-cut, and by a very expeditious operation reach the rich ore ground proved from Harrison's shaft. These works have occupied longer time than we were led to suppose, but of a successful result, and the opening of a valuable mine there cannot remain a doubt.

POLROSE.—Wm. Bennetts, Feb. 16: Good progress is being made in sinking the engine-shaft, which is now 6 fathoms behind the 90. Winze fair speed we hope to reach the 100 in about six weeks' time, and according to the underlie of the lode we shall have to cross-cut about 5 fathoms to reach the Margaret lode at that level. I have put the men in the 90 cross-cut north to open a few fathoms further east on the branch intersected in the cross-cut, 9 fathoms north of the shaft. The lode in the rise above the 90 west, on Margaret lode, is about 18 in. wide, containing strong mure and saving work for tin. The men have passed through the large spar cross-course in the 90 cross-cut south. In the western side of the cross-course we have broken some good stones of tin. I cannot see any signs of regular lode, but we are not yet sufficiently clear of the cross-course in the eastern side of the cross-cut to speak more definitely.

PRINCE OF WALES.—S. Roberts, Feb. 16: The men in the 90 end east will commence to take down the lode to-morrow as soon as we can clear the end of stuff. In the 90 end west the lode is still squeezed by the hard ground. The tribute is increasing much in this end, which we consider a good indication. Tribute pitches are without any change to notice.—Goodluck: Deep adit cross-cut is much the same as it has been during the month. Stope in back of deep adit, east of shaft on Goodluck lode, producing profitable work. The work of getting the dressing-floors in order has been delayed during the week past in consequence of severe weather.

ROMAN GRAVELS.—Arthur Waters, Feb. 17: I was underground here to-day and have pleasure in acquainting you that the lode in the 85 fm. level south boundary—5 ft. wide, worth 9 to 10 tons of rich galena per fathom. The winze below the 40 in the same run of ore ground shows a wide lode, the part carried being worth 4 to 5 tons of lead ore per fathom. There is no 50 level here, but we intend commencing next week to push the said drive south into this rich ore ground from Stokes' winze. I would also remark that we shall have to drive the 20 and the 6 fm. levels southwards, these levels being 25 to 30 fms. behind, or short of being up to the great south run of ore ground. The 80, south of Betton's winze, is now within 20 fms. of being under the 65 forebreast; lode in the end on the east side worth 2 tons per fathom. The 95 south is about 18 fms. behind the line of the 80 end; lode worth 1½ ton per fathom, and improving. The 110 south shows a promising lode, and we shall have good ground here soon. No change in the 110, north of flat-rod shaft, since last reported on. The

stope generally are yielding ore in quantities equal to those realised for the last year or two. We shall sample 100 tons of ore next week, and weather permitting, another 100 tons the week after.

SOUTH CONDRUR.—Wm. Williams, H. King, Feb. 15: The 40 end, east of engine-shaft, is worth 10s. per fathom. The rise in the back of this level is worth 12s. per fathom. The 50 end east is worth 12s. per fathom. The stope in the back of this level is worth 12s. per fathom. The 60 east is worth 10s. per fathom. The rise in the back of this level is worth 18s. per fms. The 60, west of Plantation shaft, yields good stones of tin, and looks promising to improve. The ground in the 70 cross-cut south is harder than usual. We are sinking a winze in bottom of the 70 fathom level to prove the copper lode; this lode is nearly perpendicular, and yields good quality copper ore. The 70, west of the 110, is producing low quality tin stuff. The 80 end, west of Plantation, is worth 10s. per fathom. In the 80 east we have had not yet cut through the lode. The lode in the 93 east is worth 10s. per fathom. The stope in back of this level is worth 12s. per fathom.

SOUTH DARREN.—H. James, Feb. 17: I have been through all the underground bargains to-day. The driving of the 120 east and west is being pushed forward vigorously by the south side of a strong and ore lode, and fair progress is being made. We do not intend stripping down the lode to its full width here until the skip-road is brought down, to save the expense of drawing by manpower. The lode in the 110 east is the full width of the end, but the lead is more bunches than formerly, and more mixed with clay-slate. We are pushing on as fast as we possible can the driving of the 110 fathom level west from shaft, and the 110 fathom level east from winze. In about 4½ fms. more driving we expect to effect a communication, and shall not strip down the lode at either of these places before the ends are holed, but put an occasional blast in it to prove its course, &c., as the drivings are being extended. To-day we broke part of the lode in both ends, and it is looking very well for lead ore. The winze sunk below the 110, west of shaft, is down to the 120, and driving towards shaft commenced by the side of a healthy lode; we cannot say its value, as it is not yet cut through to its full width. The stope and pitches are much the same in value as last reported on. The machinery is all in good order, and working well.

SOUTH WHEEL CREBOR.—J. Goldsworthy, Feb. 16: The sinking of the engine-shaft is progressing satisfactorily. The stratum is a light clay-slate intertextured with quartz and pryan, with veins of rich copper ore dipping towards the lode.

TANKERVILLE GREAT CONSOLS.—Arthur Waters and Son, Feb. 17: The 220, east of Watson's engine shaft, is driven about 43 fms., and 5 fms. beyond the point where the drive intersected the wall of the shale. The lode in this latter length is 4 to 5 ft. in width, composed of carbonate of limestone, or country rock, and lead ore, the present value of the end being 12 cwt. per fathom, and improving as we go forward. Strange to say, but there is no appearance of shale on either side of the lode here to-day, and all we can say at present is that said fact is agreeably puzzling. We are watching this point with the greatest interest. In the back of the said level (say 6½ fms. above the 220) we stopped the ground to the shaft by the side of a healthy lode, and are driving east on it, and get occasional stones of lead ore. There are two stope in the back of this level on the main lode, worth together 3 tons per fathom. The 206, going east of No. 1 cross-cut, on the south lode, shows very promising indications indeed, and as this drive has cut down the water from the 62 and 74 we are looking forward to meeting with a wide lode cavity, &c., with good ore ground as the end advances. The 206, west of Watson's, shows a lode 5 feet wide, worth 30 cwt. of lead ore per fathom. The rise in this level, near the creek, shows a lode 4 to 5 ft. wide, in which there is a very splendid-looking cavity, the ore being about 2 tons per fathom. The rise above the lode level, on Robert's lode—(The two rises in question are opposite each other, and only about 3 fathoms apart)—shows a fine cavity, the ore course being still worth 2 tons per fathom. The winze below the 192 is worth 1 ton per fathom, and is leaving good stopeing ground in each end. The 182, going north-west on line of the shale, is now into one of the north lodes, and which is composed of spar and stones of ore. The 100 cross-cut, north of Watson's shaft, looks like being near a lode. The 74, east of main lode, on the south lode, is worth ½ ton of lead ore per fathom. Other points without change for some time past. We have sampled 60 tons of No. 1 quality lead ore for sale next week.—Penney: The engine is pumping regularly and well, the water being 11 fathoms below the Boat level at 3:30 P.M. to-day.—Bog: The water at the above hour was 7 fms. 1 ft. below the adit deep adit level, and engine working well. We have had a splendid dry day, and calculate to make good progress in draining the mines from this time forward.

TAMAR.—R. Goldsworthy, Feb. 16: The lode in the 57 south is just the same as when last reported—still 6 ft. wide, and from its promising appearance we have improved it to 10 ft. wide, and the winze is sinking in the bottom of the 37, is 2 ft. 6 in. wide, producing 4 cwt. of silver-lead and 2 tons of fluor-spar per fathom, and promising for further improvement. Good progress has been made in driving the 27 fm. level cross-cut east and west; the character of the ground is all that can be desired for the production of mineral. No other change to notice.

TEMPLE.—Feb. 16: There is no change of importance to report this week. The compressor and all other machinery is working satisfactorily. The weather has been improving, and is much more favorable for surface operations.

TIN HILL.—J. H. James, S. Trethewey, Feb. 16: The masons are pushing on fast with the buildings. They have completed smith's shop, men's changing-house, and carpenter's shop, and are now at work on the engine-house, on which they have a good force. The lode in the stope at Red shaft is about 9 ft. wide, worth about 1 cwt. tin to the ton of lodestuff. The lode in the stope, on the great counter lode, is over 6 ft. wide, and worth over 1 cwt. of tin to the ton of lodestuff. All points of operation are of a very promising character, showing an improvement as depth is attained. But owing to the floods of rain we are unable to sink deeper at present. We have to concentrate our operations at the shallower levels, and this we shall have to do until drier weather sets in or until the engine is set to work to pump out the water, when we shall sink away on the rich courses of tin in the bottom of our present workings.

TREVINE.—John Mayne, Feb. 17: New Shaft: The sinking is being pushed on as quickly as possible. The lode so far as seen looks well. We are not yet sufficiently through it to put a value on it, but I am of the opinion it will be quite as well if not better than it was in the old shaft, where it produces 6 tons of copper ore per fathom. By the way, we hope to reach the top of the copper ore it produces per fathom. The ground on the cross-cut is still changing, the kills being of the same conical character for mineral. I am daily expecting to cut the lode, which, if cut good, in which I have every confidence, a long run of copper ore ground will then be discovered, and regular monthly sales of copper ore be made.

VAN CONSOLS AND GLYN.—James Roach, Feb. 16: Murray's engine shaft, under the 60 fm. level, below the deep adit, is being deepened with great effect. The lode is now 10 ft. wide, and the winze is sinking in the bottom of the 60 fm. level, driving west of shaft, on the north part of the lode, is yielding lead sufficient to send to the flooring for extraction. I expect it will daily improve in value. No rise in the lode above the 60 fm. level, is without ore to value; therefore this point has been suspended, at least for the present. No 2 rise, above this level, is still yielding stones and fine cubes of lead, with every indication of becoming profitably productive. The 50 fm. level, driving south-west of Murray's shaft, towards and under the ore in No. 1 stope, is in close proximity to the point we anticipated finding valuable ground for lead. The cross-cut driving south in the lode at the 50 fm. level, at a point about 50 fms. west of the shaft, is now 15 ft. long. This is producing stones and flints of lead. No. 1 stope has been recently filled with deads, and is now in good order for further excavation of the lode, and is yielding lead in good quantities. No. 2 stope is without alteration since last reported. Tributaries are still at work, and earning good wages at 90s. per fathom. I expect I shall let another section of ground on tribute to-morrow. The western engine shaft is now down between the 20 and 30 fm. levels, the latter at the bottom of the mine.

WEST CARADON.—N. Richards, Feb. 16: Gilpin's lode, in the back of the 17, will yield 1½ ton of copper ore per fathom. Vivian's north lode, in the back of the 50, is worth 1½ ton of copper ore per fathom. The lode in the level driving east of cross-cut at the 38 will yield 2 tons of copper ore per fathom. Two stope in the back of this level, one east and the other west of the cross-cut, will yield in the aggregate 4 tons of copper ore per fathom. No other remark to make in the underground department. I am pleased we have a favourable change in the weather, and have commenced dressing, and shall push on to get a parcel of the ore ready as soon as possible, and which I calculate will not be less than 100 tons of a fair quality.

WEST CREBOR.—John Andrews, Feb. 16: Operations at the present time are confined to making cart-road through the fields from the main road to the mine, and raising stone for the buildings.

WEST DEVON GREAT CONSOLS.—G. Rowe, Feb. 17: Since the late heavy rains all our surface operations have been carried out very satisfactorily, and we shall be in a good position to commence the buildings for the pumping and drawing engines to fork out the water in the new engine-shaft, and commence the drivages both east and west on the course of the lode, where we have fine stones of ore and rich quality burnt-up gozzan mixed with black oxide of copper.

WEST GODOLPHIN.—T. Hodge, F. Hodge, Feb. 15: The shaftmen are engaged clearing a pile of stuff lying in the shaft at the deep adit level and cleaning up the cistern to make all ready to fix the pitwork. We shall send down our first portion of pitwork by a winch to reach the adit, where we start to drain the mine; the shears are ready, and we shall soon commence with this work. The cylinder is screwed down, and the nozzle and pipe fixed thereto, and we are now waiting the delivery of eduction pipe, piston-rod, cover, and main loops. We think it is not out of place to inform the shareholders that a number of persons round this neighbourhood who have known the mine for years assure us that in West Godolphin we shall open up a rich mine.

Feb. 16: Since writing to you the eduction pipe, &c., have been delivered, and also the second boiler, the third to follow in a day or two.

WEST HOLWAY.—R. Rowlands, Feb. 17: All our levels maintain their productiveness. The rise in the roof of the 80 is in a splendid run of ore, and seems likely to continue so for some time. Ram shaft cross-cut is making good progress, and you may expect excellent results on meeting the lode. We are busy dressing lead.

WEST KITTY.—W. Vivian, Feb. 17: In the 72 fm. level, driving east, the lode is 3 ft. wide, worth 12s. per fathom for tin. The rise in the back of the same level the lode is 4 ft. wide, worth 40s. per fathom. In the 72 fm. level, driving west, the lode is 3 ft. wide, producing rich stones of tin, with every appearance of further improvement. In the 60 fm. level, driving east, the lode is worth 25s. per fathom.

WEST PATELEY BRIDGE.—D. Williams, Feb. 17: We have nothing new to advise you of from this mine this week beyond a further improvement in the 67 north-west, where the lode is upwards of 2 ft. wide, composed chiefly of sulphate of barytes, spar, and carrying a mixture of lead ore; worth 8 cwt. per fathom. On the surface we are proceeding with the dressing operations as fast as the weather will permit.

WEST POLBREEN.—W. Vivian, Feb. 17: We have opened a shaft in the eastern part of the mine, and been down to the adit level to-day. I find it is 40 fm. deep. There are immense workings to be seen above the adit level, showing there must have been large quantities of tin taken away. But little work has been done below the adit level, as no engine was ever erected on this mine.

WEST WHEEL SETON.—W. R. Rutter, M. Bath, Feb. 17: Mitchell's engine shaft, sinking under the 190 fm. level is down 10 fms. The lode is worth 20s. per fathom. The lode in the 190 end, driving east of the shaft, is at present small and unproductive. The lode in the 190 end, driving west of the shaft, reported at our last meeting as being saving work for tin, has since then greatly improved. It is now a strong, promising lode, and is worth for tin and copper 20s. per fathom. The end is just now entering the run of rich ground discovered at the 177 fm. level about a year ago, and the winze coming down in front of it is in a good lode, we are looking forward to a still further and more important improvement at this point. The lode in the 177 end, driving west of the shaft, is worth 16s. per fathom. The winze sinking under this level, in advance of the 190 end, is worth 50s. per fathom. The 140 end, which is being extended in the New Seton ground, on the new lode, or caunter, produces occasional stones of good quality copper ore, and has an altogether improved appearance. The aggregate value of the different stope and pitches throughout the mine is much the same as stated in our last report.

WEST WHEEL TOLGUS.—J. Gilbert, Feb. 17: The lode in the 155, driving west of Taylor's shaft, is 3 ft. wide, and still producing ½ ton of copper ore fm. In the 145, west of shaft, the lode is 2½ ft. wide, composed of spar and white iron, and about ½ ton of copper ore per fathom. The lode in the 135, west of shaft, is 2 ft. wide, yielding a little ore, but not sufficient to value.—Richard's Shaft: In the 105, west of shaft, the lode is 2 ft. wide, and yielding occasional stones of copper ore. The ground is also getting more broken up, and letting out an increased quantity of water. The lode in the 95, west of shaft, is 3 ft. wide, and producing good stones of copper ore. The lode in the 85, west of shaft, is yielding ½ ton of ore per fathom. The stope are much the same as when last reported. Our sampling this week is (computed) 151 tons of copper ore.

WHEEL BOYS.—W. T. White, Feb. 16: All work throughout the mine is progressing very favourably since we have commenced to drive the 50 west of cross-cut. The lode appears to be improving in size and value, producing fair quality work for tin with every prospect of improving as we extend west. The men at the 36 are busily engaged in clearing the tin stuff west, and as soon as they are shut at once commence to sink the winze in bottom of same, in which there is a good lode of tin. The stuff clearing from the 36 is now being driven to surface, and will be at once got ready for sale. The prospects of the mine are exceedingly good.

WHEEL COATES UNITED.—W. H. Martin, Feb. 15: We have suspended the sinking of the engine shaft for the present. The shaftmen for the last few days have been securing a loose shale of ground, on the south side of the engine shaft at the 40, which we expect to complete to-morrow; we shall then commence to cut ground at the 60 fms. for the plunger lift: this work will be pushed forward without delay. The 80 west is driven from shaft 20 fms. We have taken the men from this end to drive the 50 west. The 70 east is driven from shaft 39 fms. 3 ft.; driving by three men and three boys at 6s. per fathom; worth for tin 9s. per fathom. The trial is up 3 fms., rising and stopping by six men at 3s. and 6s. per fathom; worth 7s. per fathom. The 70 west is extended from No. 2 winze about 14 fms. The lode in the present end is of a very hard nature, and highly mineralised; a very kindly-looking lode, last driven by six men at 10s. for one fathom sent. On Monday last we put these men to drive a cross-cut south through the elvan, to intersect the same lode we cut last week in the south cross-cut at the 50, by six men at 9s. per fathom. In the 50 cross-cut west, south of the elvan, we intersected a lode 3 ft. wide of a most promising character, producing 28 lbs. of tin to the ton of stuff. This is a very important feature in the western section. Since the elvan has shown in the 50, 60, and 70 west levels, the lode has been unproductive, although it presents a very kindly appearance. I consider that this new lode south of the elvan has shown stronger indications for the future than anything we have yet seen. It is my opinion that this lode is running parallel with the 60 and 70, and should we intersect a productive lode in the 70 west cross-cut, which I have every reason to believe we shall do, knowing that we have the great cross-course to intersect in about 12 fms. beyond the present end, on reaching the western side of the great cross-course, I shall recommend to drive a cross-cut south to intersect the Wheel Kitty lode. It is my opinion that this lode is standing south of our present workings. By the strong influence of this great cross-course all the lodes in the southern mines have been heaved north several fathoms; should the heaves be similar with our lodes, a shorter cross-cut will reach the Wheel Kitty lode, and in a more productive channel of ground.

WHEEL CREBOR.—George Rowe, Henry Phillips, Feb. 15: Our progress in putting the rise in the back of the 120, on the south part of the lode, is very satisfactory, but the lode is not taken down. The lode in the stope in the back of the 120, east of winze, is worth 35s. per fathom. No. 2 stope, in the back of the same level (the 120), is worth 40s. per fathom. The lode in the 108 east is 6 ft. wide, with a very kindly appearance, and producing an increase of water, with mure and ore intermixed. The lode in the rise in the back of the 108, on the south part, is worth 60s. per fathom. The lode in the stope in the back of the same level (the 108), west of rise, is worth 40s. per fathom. The lode in the stope in the back of the same level (the 108), east of rise, is worth 80s. per fathom. No. 3 stope, in the back of the same level (the 108), is worth 35s. per fathom. The lode in the new shaft, sinking below the 72, is producing fine stones of ore. All other points are without change. Our deferred sampling to-day is computed at 549 tons of copper ore.

WHEEL GEORGE.—C. Knebone, Feb. 16: The adit level on the new lode is going forward in a very favourable channel of ground, and in an open, powerful, and highly mineralised lode yielding good stones of lead ore. The hanging wall has now come round to its former bearing, but we have not yet taken down the lode to full width till we get in some timber to support the roof, which we shall do in two or three days. We have cleared the Coed Mawr or western adit, which was driven some years since with the intention of cutting the great Roman lode found to be so very productive both north and south of this level, but by an error in judgment the former workers contrived to miss their object entirely. This matter is having now careful attention as it is of considerable interest and importance.

WHEEL GRENVILLE.—T. Hodge, Feb. 15: I see no change whatever in the bargains since my last, and if I were to value them to-day I should only be going over the same ground again. We have cleared out the ground for the boiler, and the masons will commence this week. Other surface work is going on as fast as the weather will permit.

WHEEL PEEVOR.—W. T. White, T. C. King, Feb. 16: Setting Report: The following bargains were set on Saturday last:—The 90 to drive west, at 9s. per fathom; lode worth 12s. per fathom. To cut through the lode in the 90 east, on the new lode, at 6s. 10s. per fathom; the lode here has taken a more northerly direction, hence our desire of ascertaining its width. The rise in the back of the 90, on the south lode, at 6s. per fathom; the lode is worth 12s. per fathom. A winze to sink in the bottom of the 80, directly over the rise in the back of the 90, at 4s. 10s. per fathom; the lode is worth 12s. per fathom. We hope to communicate here in about a fortnight's time, which will greatly facilitate our working in the 90. The 80 to drive east, at 6s. per fathom; the lode is worth 10s. per fathom. We have cut through the lode in the 80, west of slide, and find it fully 5½ ft. wide; it is a fine-looking lode, and produces good work for tin; we value it to be worth 40s. per fathom. The rise in the back of the 80 west at 5s. 10s. per fathom; lode worth 10s. per fathom. A winze to sink in the bottom of the 70 west, at 12s. per fathom; lode worth 15s. per fathom. This winze is just over the 80 end, west of slide, and the great feature in connection with this is since we have cut into the lode in the 80 ft. has been thoroughly drained all the water from the winze and left it quite dry; we look upon this as most important. The 70 to drive west, at 7s. 15s. per fathom; the lode is worth 20s. per fathom. The 70 to drive east, at 7s. 10s. per fathom; the lode is worth 15s. per fathom. The rise in the back of the 70 east, on the middle lode, at 2s. 15s. per fathom; the lode is worth 15s. per fathom. The 70 to drive east of shaft, on south lode, at 5s. 10s. per fathom; lode worth 12s. per fathom. We have also set a cross-cut to drive north in this level to cut the north part of the lode, which we hope to do in about 10 or 12 ft. driving; this is a good feature, as this part is standing whole to the extent of the driving east of the shaft. The cross-cut to drive north in the 60, at 7s. 15s. per fathom. The cross-cut to drive south, at 7s. 15s. per fathom. The main rise in the back of the deep adit level, at 7s. per fathom. We are making all possible progress in clearing the old dump-shaft. We also set eight stope on trow, at prices varying from 2s. 15s. to 3s. 15s. per fathom; the lode is worth in each about 10s. per fathom. We are very pleased to find the lode in the 80 west is opening up so good west of the slide; we look upon this as one of the most striking and important features we have met with in the mine.

WHEEL UNY.—H. Eddy, M. Rogers, Jun., Feb. 17: After passing through a horse of kills the lode in the 172 end west has greatly improved, now worth 15s. per fathom, and still improving. The rise in the back of this level is worth 15s. per fathom, we have taken down the north part of the lode behind the end in this level, and find the lode worth 8s. per fathom. The lode in the winze in the bottom of the 160 west is worth 6s. We expect to communicate with the rise in the 172 in a fortnight from this time. The various stope throughout the mine are yielding the usual quantity of tin.

WHEEL RUSSELL.—J. Gifford, John Bray, Feb. 17: In the 55 east we are rising by the side of the caunter lode, which is 2 ft. wide, yielding stones of copper ore. We shall take down the lode in the 55 west. In the rise in the 55 east on the main lode the lode is 1½ ft. wide, yielding 1½ ton of good copper ore per fathom. In the cross-cut north in the 55 east the ground is more favourable for progress. No change in the 70 west, on Mathew's engine-shaft, to report on.

BWLCH UNITED.—The mine is nearly in fork after the unprecedented severe weather, and dressing has again been resumed. Splendid specimens have been received of silver-lead ore driving in the slide, and even a discovery of importance may be looked for at this point.

GOREDD AND MERLYN.—This mine is opening up in a manner most pleasing to all associated.

East Wheel Rose has been incorporated with a capital of 100,000*l.* in shares of 1*l.* each, to purchase for 40,000*l.* (one-fourth in cash and the remainder in fully-paid shares) and re-work the mine—one of historical celebrity, and which returned to the last set of adventurers nearly 300,000*l.* in dividends in 15 years, representing 20 per cent. per annum upon the amount of capital now to be raised. It is stated in the prospectus (which will be found in another column) that the property comprises the mining leases for about 21 years, at a royalty of 1-18th. of about 1000 acres of ground, which gives a run of about 1½ mile on the north and south lodes, and ¾ of a mile on the east and west lodes. It is one of the richest and most extensive of the coal and iron ground in England, a branch of the Great Western Railway runs through the sett, from which sidings are already made, and these will be extended to the engine-house and digger's doors.

thereby saving a large sum per annum in carriage. The reports upon the property are very encouraging, and so certain are the vendors of its great value that they have agreed with the company to guarantee that the dividend for the first year shall not be less than at the rate of 7 per cent. per annum on the capital paid up. This period, it is considered, will give sufficient time for erection of machinery to pump out the water and other preliminary work; but as Captain Hooper reports that "almost as soon as you commence to drain the mine you can commence raising lead," the directors have every expectation that a larger dividend will be earned, and that it will not be necessary to call on the vendors for their guarantee.

The Coed-y-Fedw prospectus will, it is said, be issued next week. It is understood that the property to be acquired is one of considerable promise, and that the direction will be such as to ensure the ready support of capitalists.

Devon Great Consols, 14 to 15, notwithstanding the severity of the weather has sampled 888 tons of copper ore. A good discovery is expected in driving eastward.

Devon Great United, 2½ to 2½, and reported to be in demand. A discovery is shortly expected in driving the cross-cut to intersect the rich Devon Great Consols lode.

Kit Hill, 1 to 1½, and in good demand. Operations will be vigorously prosecuted with boring machinery in driving the tunnel into Kit Hill to cut several rich tin lodes, and good discoveries expected.

East Long Rake, 1½ to 1½; a correspondent writes that "the interest in this mine continues unabated, and the demand for the shares is still active, meanwhile the mine is improving, as will be seen from the reports in another column. The stopes have improved, and a rib of lead, 3 in. wide, is now in the end driving east on the middle lode, while the cross-cut south is fast approaching the Gin lode. Capt. H. B. Vercoe, who has for some time past been the agent at the Prince Patrick Mine, has now been appointed to superintend this property, and the interests of the company will be well looked after by him.

Monk, 15 to 15½; upon clearing the bottom of Cavin's shaft a very fine course of ore has been uncovered, and three tribute pitches have been let in the back of the 80. No change elsewhere. All operations progressing satisfactorily.

Parys Copper Corporation, ½ to ½; the company have this week sold copper ore to the value of 2600; copper precipitate, 6200; ochre, 4800; = 13600. The prospects are considered to be improving.

South Tolcarne, 1½ to 1½; at the meeting on Thursday the accounts for the past five months showed a balance against the mine of about 1067½, after deducting the value of tinstone sold on Monday last, amounting to 1157½. This being the first sale of tin under the new management great interest was manifested in the proceedings. In the completely altered prospects of the mine a call of 5s. per share on 6000 shares was readily agreed to, which after meeting all claims would leave a few hundred pounds over for further development. A member of the committee of management was authorised to proceed to Camborne early next month to settle any claim to date against the mine.

Richmond, 16½ to 17; the usual telegram from the mines at Eureka, Nevada, states that the week's run was \$48,000, from 888 tons of ore. During the week the refinery produced doré bars to the value of \$50,000. The manager (Jan. 26) reports that the raise in the back of the 500, south-east of No. 14 chamber, has encountered ore, on which a raise has been put up 30 ft. in good ore; this promises to be an extensive ore body. The 600, north from the No. 14 chute, has been advanced 15 ft.; ground more favourable for drifting. The 700, north-west from the 600 winze, has been drifted 9 ft. in the same character of ground. The 900 west drift has been extended 6 ft.; ground somewhat more favourable. The 900, north-west on fissure, has been drifted 20 ft.; the ground is looking much more favourable for ore than it has for some time. The 900 winze is now down a total depth of 103 ft.; the ground in the bottom is improving, and looks very favourable for ore. All the chambers are looking well, and on the whole there is an improvement since last report.

Ruby and Dunderberg, 6½ to 6½; the usual weekly report points out that progress is being made in opening up in the 300 west towards the Home Ticket. From the telegram it is noted that great inconvenience had been created by the severity of the weather, which had prevented shipments of ore being made except to a very limited extent. In spite, however, of this obstacle it is remarked that the quantity of ore reported as brought down from the mines shows a small increase.

California, ½ to ½ prem.; it is announced that Mr. John Elliott, late chairman of the Richmond Consolidated Mining Company, and Mr. T. Rickard, whose partner is the well-known manager of the Richmond, have joined the board of the California, and Mr. Rickard has consented to proceed at once to Colorado to see that everything is in order, and to report to the directors before any money is parted with on account of the purchase. This is as it should be. Mr. Rickard goes out in the responsible position of a director of the company, which his high professional reputation as a mining engineer, especially in connection with the Richmond and other successful mining enterprises, ensure the necessary care and skill in making his investigations. It can only be supposed that these gentlemen, who are connected with a mine whose 5½ shares stand to-day at 16½, 10s. to 17s., were fully assured before they joined the board of the California company, that the property which the company has agreed to purchase will maintain the reputation it has acquired as one of the richest gold mines in Colorado.

Missouri, 10½ to 11; advices received state that the dressing and smelting of ore is now being continuously carried on. The usual semi-monthly report will appear next week. There is a prospect of an ample supply of miners when the spring opens.

Nava de Jadraque, ½ to 1; it is announced that the guaranteed dividend, due Jan. 31, at the rate of 12 per cent. per annum, was paid on Feb. 12.

Michipicoten, 1½ to 1½; it is stated that the amygdaloidal gangue of the lode, from a test sample weighing about 25 lbs., similar to the deposit at the bottom of the office shaft, has by crushing and washing yielded upwards of 10 per cent. native copper. This is doubtless exceptional, but the bed for 8 ft. wide is estimated to yield 2½ per cent., and the middle bed, where cut through, about 50 ft. from the No. 1 or office shaft bed, is about 30 ft. in width, and the No. 3 deposit seen in the lake, dipping towards the island, is about a further 50 ft. distant, and can be reached from the same cross-cut. The large profit making by the south shore mining companies is from gangue yielding from under 1 per cent. to 3 per cent.

Sentine Silver-Lead, 1½ to 1½; these shares are reported to have been largely enquired for. It is said that "from the great width of the lode, together with the length for which it can be seen and traced on the back, and from its compact nature, its duration, notwithstanding the number of hands that may be employed in excavating it, would seem to be indefinite. The lode has been valued at 60 tons of ore per fathom."

The market for Hydraulic or Gold-washing shares has been quiet during the week, and prices remain unaltered. Blue Tent, 1½ to 2; a telegram from the manager announces that washing is steadily in operation, with a full head of water from the company's own ditch. Birdseye Creek, 1½ to 2; a full report will be found in another column; the Waloupa and Red Dog claims are opening out well. Oregon Preference, 4 to 4½; the result of the washing for December is about \$200; the season has so far opened cheerfully.

Placerville, 2½ to 2½; a trial of the ore stuff from the new vein has been made with satisfactory results, 120 tons having been raised indiscriminately from the lode and crushed, the yield being \$1360.

In Lead Mine shares there has been rather more doing, and there are much greater facilities than have existed for some weeks past to sell at quotations. Van, 15 to 16; there is no change reported from the mine this week. The workings are progressing as usual.

Frongoch, 4 to 5 cum div. The circulation of the report of the meeting has brought in many buyers of these shares. The severe frost stopped the ore sales during last month, but the milder weather has brought about a renewal of dressing operations, and 150 tons of blende are for sale on the 24th. An improvement in the bottom levels of the mine is also reported. Lead dressing is proceeding actively.

Growthin, 2½ to 3, and are a good deal enquired for; it is understood that the necessary expenditure on the new shaft with the pumping and winding gear will now cease, and that the future revenue will be available for distribution amongst the shareholders. The future prospects of the mine below the river's bed are stated to be most promising. A parcel of 100 tons of lead will be sold next week. The intermediate level is opening up a fine run of ore ground. Other points of operation show good indications of further improvement.

Red Rock, 1½ to 2½; the lode in the 23 fathom level continues its productive-ness. A parcel of 30 tons of lead will be sold next week.

New Wye Valley, 1½ to 1½; the frost has much delayed operations during the past month, but vigorous efforts are being made to make up for lost time, and nearly all the last parcel of ore has now been delivered. A further sale will be made very soon.

Ystwith, 1 to 1½; these shares have been very largely enquired for consequent upon a reported discovery in the south cross-cut of a new lode showing good lead. Particulars, however, are not yet to hand.

West Pateley, 1 to 1½; there have, it is said, been enquiries for these shares since the announcement of the improvement in the 67, it being felt that a lode

in this deep level of the same value as in the 56 would soon place the mine in a dividend-paying condition.

Caron, 1½ to 2½; the improvement in the lode still holds good, and there seems every chance of further improvement. A small parcel of lead has just been sold.

Concerning some other Welsh lead mines, a correspondent writes that at Pant-y-Mwyn the bottom level is nearing the first of a series of rich runs of ore, which have produced thousands of tons of ore in the levels above, and there is no geological reason why the deeper levels should be less productive. During the last two years the Great Newborough lode at the British Silver-Lead Mines has been proved by sinking pits on its back, and in every pit sunk the lode is very rich—a stope going west, at a depth of only 5 fms., is valued at 30f. per fathom, and the lodes are embedded in the Silurian series; it will at once be seen that when further developed a very profitable and lasting mine will be the result. The run on the lodes is 1200 yards, and an adit has been driven, so that when necessary the mines can be drained 130 yards. At Nant Adia rich ore has been met with in two rises above the adit level, and also in the bottom, thus showing that the great runs of ore hold down, and that they are whole above for hundreds of yards.

At Swansea Ticketing, on Tuesday, 1140 tons of ore of 9 average produce, and containing 103 tons 14½ cwt. of fine copper, were sold for 63557. 17s. 6d., being 57. 12s. 2d. per ton of ore, 12s. 4d. per unit, or 617. 13s. 3d. per ton of fine copper in the ore, and an average standard of 87. 6s. 4d. for 9 per cent. produce. Subjoined are the particulars of the two last sales:—

Date.	Tons.	Standard.	Produce.	Per ton.	Per unit.	Ore copper
Jan. 25	1414	82 18 6	75	£4 6 6	11s. 4½d.	£56 14 6
Feb. 15	1140	87 6 4	9	5 12 2	12	69 13 3

Compared with the last sale, the advance has been in the standard 47. 7s. 10d., and in the price per ton of ore about 8s. The Betts Cove ore gave 9 per cent. produce, and sold at 12s. 4½d. per unit; Berehaven, produce 8½; per unit 12s. 2½d.; La que lo Abacan, produce 18½; per unit, 12s. 2½d. There will be no sale on March 1.

GAS SHARES.—The principal business in these shares, according to this evening's report of Mr. W. L. Webb, of the Stock Exchange and Fench-lane, has been in Brentford, 154; Bombay, 6 to 6½; Continental Union, 20½ to 21; ditto, new, 14½ to 14½; 7 per cent. pref., 24½ to 25; European, new, 9½; Gaslight, A, 185½ to 185½; ditto, B, 4 per cent. max., 82; 4 per cent. debentures, 102 to 103; Imperial Continental, 196 to 198; London, 182 to 183; Monte Video, 16½ to 16½; Mauritius, ½; Rio de Janeiro, 26½ to 26½; Oriental, 7½; ditto, new, 59½; ditto, new, 79 to 81½; South Metropolitan, A, 203½ to 206½; ditto, B, 184 to 185½. Gas stocks firm. For closing prices see list on last page of Journal.

INSURANCE SHARES have, according to this evening's report of Mr. W. L. Webb, of the Stock Exchange and Fench-lane, been dealt in as follows:—Alliance British and Foreign, 3½; ditto, Marine, 8½; Commercial Union, 26½ to 27½; Crown, 67½; Eagle, 6¾; Fire, 3½ to 4; Indemnity, 110; Imperial Fire, 155 to 155½; Guardian, 75 to 75½; London, 63½ to 63½; London and Provincial, 5½ to 5½½; Liverpool, London, and Globe, 23 to 23½; North British and Mercantile, 67½ to 67½; Marine, 97½; Ocean, 8; Queen, 47½; Rock, 8½ to 8½½; Thames and Mercantile, 12½ to 12½; Royal Insurance, 34½; Universal, 8½ to 8½. Good business doing in insurance shares, buyers predominating. For closing prices see list on last page of Journal.

TRAMWAYS.—The closing prices of this evening, as quoted by Mr. W. Abbott, of Tokenhouse-yard, are given in tabular form in the last page of the Journal.

RAILWAY AND GENERAL MARKETS.—Referring to the course business done to-day during official hours (11 to 3). Mr. Ferdinand R. Kirk, Birchin-lane, writes:—Opening: Yesterday's tumble of 3¼ on Caledonian has not as yet brought in buyers, the stock being still obtainable at 103½. Eries are 1½ higher, at 51½ to 52. New York Central are 155; Illinois Central, 138½; Readings, 33; and Pennsylvania, 67½; Egyptian United, 7½ to 7½; Turks, 188½, 13½ to 13½; ditto, 188½, 14½ to 14½; Mexican, 25½ to 25½; Spanish, 18½ to 18½; Canada shares, 15½ to 15½; Bank Ordinary, 23½ to 23½; Third Preference, 47½ to 47½; South Devon, 3½ to 4½; Parys Copper, ½ to ¾; Prince of Wales, ½ to ¾; Marke Valley, 1½ to 1½; Wheal Pevor, 2½ to 2½; Bedford United, 15½ to 15½; Emma, 3½ to 3½; Don Pedro, ½ to ½½; La Plata, 1½ to 1½½; Hungarian Copper, 20s. to 22s. 6d.; Herodfoot, ¾ to 1; North Penruth, 1½ to 2½; Tankerville, 10s. to 12s. 6d.—Closing: Brighton, A, for a short time touched 149, now 148½ to 149½. Caledonian rallied to 104½, now 104½. North British recovered, and have been done at 89½, an improvement of 1½ on yesterday. A moderate improvement shown at one time in Foreign Bonds has been checked by a weak market at Paris. Turks, 13½ to 13½; Mexican, 25½ to 25½; New, 14 to 14½; Peruvian Five per Cent., 20½ to 20½; Six per Cent., 24½ to 24½; Atlantic Firsts, 64 to 64½; Seconds, 31 to 31½; Thirds, 15½ to 15½; Rio Tinto, 24½ to 24½; South Indian Gold, 2 to 2½; Glenrock, 1½ to 1½; Devala, 1½ to 1½; Folsi, 1½ to 1½½; Van, 15 to 16.

GOLD AND SILVER.—Messrs. PILEY and ABELL (Feb. 17) write: The arrivals of gold have been from the Continent, and with the exception of a few small orders for India, there has been no demand for export. The Bank has, therefore, purchased the bulk of the imports, the total sent in since the 10th inst. being 325,0000. The Don has brought 74000 from the West Indies, and the Ancon has taken 59,4000 to India. SILVER.—Our market has been very excited on the announcement of the meeting of the International Monetary Conference in April, and prices have risen considerably; on the 11th inst. the silver by the West India steamer was sold at 51½d. per oz., yesterday business was done to some extent at 52½d. to 52½d., and we quote that as the price for to-day. The Don brought 22,9000 from the West Indies. Steamers brought 40,2800 from New York; total, 63,2800. The Severn has taken 80000 to the West Indies, and the P. and O. steamer 48,7000 to Calcutta and Bombay.

The next meeting of the Iron and Steel Institute will be held in London on May 4, 5, and 6. Mr. Josiah Smith, of Barrow, will preside.

The Master of the Rolls has appointed Mr. Arthur W. Blunt official liquidator of the Liverpool and London Guarantee and Accident Insurance Company (Limited).

The Stock Exchange Committee have ordered the shares of the Indian Phoenix Gold Mining Company (Limited) to be quoted in the official list. A MacLean's telegram to the following effect has been circulated:—It is reported at Constantinople that the mines of Heraclea have been sold to a syndicate of which the Ottoman Bank is a member.

At the annual meeting of Joseph Rogers and Sons (Limited), cutlery manufacturers, Sheffield, a satisfactory report was presented, and a dividend of 17½ per cent. declared.

The average passage from Southampton to Melbourne by steamship is 54 days. The fastest voyage from Australia—Adelaide to Plymouth—was made by the Cuzco in 37 days 10 hours. A sailing vessel takes about 95 days.

GEOLOGICAL SOCIETY OF LONDON.

At the anniversary meeting of the society, held at their apartments, Burlington House, yesterday (Friday), the following medals were awarded: The Wollaston medal to Prof. P. M. Duncan, the Murchison medal to Prof. A. Geikie, the Lyell medal to Principal Dawson of Montreal, and the Bigsby medal to Dr. C. Barrois of Lille. The obituary notices included Prof. Miller, S. V. Wood, the Rev. Clifton Ward, Prof. Ansted, Dr. Bigsby, &c. The address of the President treated of the Analysis and Distribution of the Palaeozoic Fossils.

The officers elected for the ensuing year were:—President: R. Etheridge, F.R.S.; Vice-Presidents: John Evans, D.C.L., LL.D., F.R.S., J. W. Hulke, F.R.S., Prof. J. Morris, M.A., H. C. Sorby, LL.D., F.R.S.; Secretaries: Prof. T. G. Bonney, M.A., F.R.S., Prof. J. W. Judd, F.R.S.; Foreign Secretary: Warrington W. Smyth, M.A., F.R.S.; Treasurer: J. Gwyn Jeffreys, LL.D., F.R.S.; Council: H. Baerman, Rev. J. F. Blake, M.A., Prof. T. G. Bonney, M.A., F.R.S., W. Carruthers, F.R.S., Prof. P. M. Duncan, M.B., F.R.S., Sir P. de M. Grey-Egerton, Bart., M.P., F.R.S., R. Etheridge, F.R.S., John Evans, D.C.L., LL.D., F.R.S., Lieut.-Col. H. H. Godwin-Austen, F.R.S., J. Clarke Hawshaw, M.A., Rev. Edwin Hill, M.A., W. H. Hudleston, M.A., J. W. Hulke, F.R.S., J. Gwyn Jeffreys, LL.D., F.R.S., Prof. J. W. Judd, F.R.S., Prof. N. S. Maskelyne, M.A., M.P., F.R.S., Prof. J. Morris, M.A., J. A. Phillips, F. W. Rudler, Prof. H. G. Seeley, F.R.S., Warrington W. Smyth, M.A., F.R.S., H. C. Sorby, LL.D., F.R.S., Henry Woodward, LL.D., F.R.S.

DEVON FRIENDSHIP.—Capt. Daw has been engaged at the mine settling the plan of operations and arranging for the erection of the machinery necessary for the large increase of returns about to be made. These will now be completed with all speed. Even from the present small workings, however, the agents report there will be a good profit on the month's working. Capt. Daw, it will be remembered, estimated that by the end of May the profits would be over 5000. per month, equal to 10 per cent. on the whole capital of the company. These results are of course independent of the returns which are anticipated from working the lodes parallel to those which gave the old company dividends of upwards of 300,0000.

CALLINGTON CONSOLS.—It is gratifying to learn that already the applications for shares have been such as to ensure the energetic prosecution of the mine. The company will no doubt commence operations with every facility for conducting the undertaking to a successful issue, and the gentlemen connected with the direction and management are so well known, and of such long experience, that permanent success is considered certain.

NEW SOUTH POLGOOTH.—This mine adjoins the now celebrated South Polgooth. A company is in course of formation to work the property, which will be under the same management as its rich neigh-

bour, South Polgooth. The grant is a large one, and contains all the trunk lodes of the district.

WEST CARADON MINE.—The various points of operation maintain their value, and the prospects generally are most encouraging. They have commenced dressing ore for the first sampling, which the agent says will not be less than 100 tons.

WEST LISBURN.—The works are proceeding rapidly at this mine, and a large force of men are at work to complete rapidly the erection of the new machinery.

PATELEY BRIDGE.—The agent reports that in the 30 fathoms cross-cut he has just passed through a most favourable branch of spar carrying a small leader of lead precisely similar to that met with in the level above before reaching the lode.

WEST PATELEY.—The agent announces in the official report a further improvement in the 67 north-west, where the lode has increased in size, now worth 8 cwt. of lead ore per fathom. This is important, as in the level above, the 56, a course of ore over 70 fms. in length was driven through, in places worth from 10 to 12 tons per fathom. Up to this time great disappointment has been felt at the absence of ore in paying quantities below this rich deposit, but now it would appear that this rich body is holding down to the deepest point, and that the shareholders are likely to be well rewarded.

THE PEVOR SCARE.—The annoyance and loss which shareholders subject themselves to by precipitately acting upon floating rumours, whether adverse or favourable, have, writes a correspondent, seldom been more decidedly illustrated than in the Wheal Pevor and West Pevor scare which occurred last week. It appears that a small sale was made at 15½ per share for Wheal Pevor in order to create a panic, and this so far succeeded that many shares were sold at 21½ to 22½, but upon the trick becoming known they speedily recovered to 24½ to 25½. A similar drop and recovery took place in West Pevor by the same trick.

CAPPER PASS AND SON, BRISTOL,

ARE BUYERS OF
LEAD ASHES SULPHATE OF LEAD, LEAD SLAGS,
ANTIMONIAL LEAD, COPPER MATTE, TIN ASHES, &c
and DROSS or ORES containing
COPPER, LEAD, AND ANTIMONY.

C. H. WALKER AND CO.,
MINING AGENTS AND ENGINEER,
VALPARAISO AND SANTIAGO,
CHILE.

HENRY WIGGIN AND CO.
(LATE EVANS AND ASKIN),
NICKEL AND COBALT REFINERS
BIRMINGHAM.

GEO. G. BLACKWELL,
26 CHAPPEL STREET, LIVERPOOL,
PURCHASER OF

MANGANESE, ARSENIC, FLUOR-SPAR, WOLFRAM, BLENDE, CALAMINE, CARBONATE AND SULPHATE OF BARYTES, ANTIMONY ORE, CHROME ORE, MAGNESITE, EMERY STONE, PUMICE STONE, COHRES AND UMBERS, CHINA CLAY, LEAD ORE FOR POTTERS, TALC, PHOSPHATE OF LIME, &c.

JACKSON AND BUTTERFIELD,
ANALYSTS AND ASSAYERS,

Assays or Complete Analyses made of Copper, Silver, Lead, Zinc, Tin, and other Ores.
ASSAYING TAUGHT.
106, QUEEN VICTORIA STREET, LONDON, E.C.

LAS CALDAS FREEHOLD MALACHITE COPPER MINING COMPANY (LIMITED).

Business in these Shares at close Market Prices.
Messrs. WARD AND CO., 184, PALMERSTON BUILDINGS,
OLD BROAD STREET, LONDON.

M. R. F. REED WILSON,
DEALER IN STOCKS AND SHARES,
30, FINSBURY CIRCUS, E.C.

All transactions must be for cash, or fortnightly settlement, and speculative bargains in mining shares will not be entertained without substantial cover. Mr. WILSON subjoins a list of mines with whose intrinsic or prospective merits he is intimately acquainted.

East Van.	North Herodfoot.
Derwent.	Parys Copper Corporation.
Leadhills.	Roman Gravel.
Lead Era.	South Caradon.
Moria Du.	Wheal Basset.
Brazilian Gold.	Richmond.
Colombian Hydraulic.	Ruby.
Consolidated.	South East Wynaad.
Emma.	South Indian.
Frontino and Bolivia.	

The following Shares are strongly recommended for a rise:—Callao Bis, North Herodfoot, Wheal Basset, San Pedro, Nouveau Monde, West Caradon, Parys Copper, Moria Du, and Roman Gravel, in all of which Mr. WILSON has special business.

NORTH HERODFOOT.—Good progress is being made in the 80 fm. level, and rich ore is found all along the bottom. The event of the week has been the rise in SOUTH DEVON UNITED, which the reports seem fully to justify. Market firm—£4½ to £4½.

M. R. ALEXANDER DAVIDSON,
STOCK AND SHARE DEALER,
130, LEADENHALL STREET, LONDON, E.C.

OFFERS THE FOLLOWING SHARES FOR SALE AT PRICE AFFIXED, PROVIDED they are NOT SOLD, WITHDRAWN, or PRICE ADVANCED:—

20 Blue Hills, £2 12s. 6d.	10 South Frances, £9½.	90 Wheal Jane, 14s.
25 Penhalls, £1 15s.	10 West Basset, £13 5s.	25 Wheal Kitty, £3 7s 6d
70 Polrose, £2 17s. 6d.	45 Wheal Basset, £4 8s.	5 Wheal Pevor, £24.
30 Bedford United, 36s 6	80 Marke Valley, £1 10s.	40 So. Wh. Crebor, offer.
10 Devon Gr. Con., £14.	40 Mona, £14 15s.	50 West Caradon, £1 16s.
40 East Gravel, £2.	90 Parys, £4 15s. 9d.	100 West Crebor, £2 9s 3d
100 East Crebor, 14s.	100 Prince of Wales, 15s.	110 West Phoenix, £1 14s.
40 Gawton, £1 16s. 3d.	2 South Caradon, £59 15	40 Wheal Crebor, £4 3s.
50 Bodirris, £2 17s. 6d.	85 Glenroy, £2 9s. 6d.	150 South Darren, £1 17 6
46 Derwent, £2.	125 Herodfoot, £2 17s. 6d	200 Tamar Sil-Lead, 23s 6
75 E. Craven Moor, 17s.	100 Pen-yr-Orestd, £1 2s.	20 Van, £15 10s.
100 Alma and Tir., 10s.	95 Indian Glenrock, 32s.	200 Ooregum, par.
80 Canada Copper, £2 8s.	90 Indian Phoenix, 13s.	25 Panulcillo, £6.
110 Callao Bis, £1 13s. 9d.	110 La Plata, £1 12s. 6d.	100 Port Phillip, £2 9s. 9d
90 Devala-Moyar, £15.	120 Mysore, £1 12s. 6d.	50 Richmond, £16 11s 3d
100 Emma, £3 11s 3d.	100 Mysore Reefs, 1s 3d.	80 South-East Wynaad.
110 Hungarian Cop., 18s.	40 New Quebrada, £6½.	£28 9d.
100 Hoover Hill, 3s. 9d.	100 Nouveau Monde, 27s 3	120 South Indian, £2 0s 6
	90 Organos, 7s. 6d prem.	

N.B.—Any part of the above shares can be obtained. Less prices might be accepted in some cases if offers were made.

SPECIAL NOTE.—Any of the above shares will be sold for payment middle of March, 1881, on 25 per cent. of the purchase-money being paid on purchasing.

DEVON GREAT UNITED. } Wanted to Purchase, 50 Shares
WEST KITTY. } in each Mine for cash. State
SOUTH DEVON UNITED. } price.

FOR SALE:—

25 Bedford United.	20 Crebor.	50 Gawton.
50 Prince of Wales.	25 West Lisburne.	25 Hornachos.
5 Pevor.	50 South Devon United.	5 South Frances.
Address, H. WILKINS, 1	Tamworth Villas, Tottenham.	10 Frongoch.

MESSRS. J. TAYLOR AND CO.,
MINING ENGINEERS AND INSPECTORS,
86, LONDON WALL, LONDON, E.C.,

Have Agents in the various Mining Districts of Great Britain, the Continent, Australia, and the United States of America. Inspections undertaken, either personally or by our Agents, and Reports or Advice as to Working given.

THE RICO SILVER MINING COMPANY OF COLORADO

Has a Capital Stock of 25,000 Shares, of \$10 each, full paid, and non-assessable. It is a Limited Liability Corporation, organised under the Laws of the State of Illinois, for the purpose of purchasing, developing, and working Silver and Gold Mines situated at Rico, on the Rio Dolores, in that part of Colorado known as the "Silver San Juan" Mineral Country.

The Principal Office of the Company is at Chicago, Illinois.

The Georgie Mine, owned by the Rico Silver Mining Company, is situated in Horse Gulch, about one mile and a-half from the city of Rico.

The Georgie Lode appears to be a true fissure vein, which cannot be exhausted with depth; its width is now 3 feet 6 inches, and it is growing wider at the foot of the Incline Shaft. The country rock now is a calcareous pyritiferous quartzite, and the ore now consists of decomposed iron pyrites, white iron, black oxide of manganese, also galena carrying silver and gold; the quantity of galena increases as depth is attained. The gangue consists of quartz, calc spar, white spar, and felspar, partly decomposed.

From these, and from other indications, it is considered by competent mining experts that the Georgie Lode Claim is a very valuable property, and that it will produce good smelting ore, rich in silver, and probably carrying gold also.

The Company owns a mill site of five acres, situate at the junction of Horse Creek and the Dolores River.

The Grand View Smelting Works, distant about one mile from the Georgie Claim, are now in operation, and buying ores.

The Directors of the Rico Silver Mining Company offer for Sale a limited number of Working Capital Shares on very favourable terms to investors.

The policy of the Rico Silver Mining Company may be briefly outlined as follows:—To buy Mineral Claims from prospectors and locators now while Claims are cheap; to do sufficient work on each Claim to entitle the Company to a United States Patent; to take out the United States Patent for the property, and thus make the title secure; in other words, to do precisely what the Locator himself would gladly do had he the necessary capital; finally, to do the deep working when it can be done cheaply and profitably, which time will not be long coming after the Denver and Rio Grande Railroad reaches Derango this Spring.

The plan of operation pursued by the Rico Silver Mining Company has this result:—According as Working Capital Shares are sold, both fresh property and enhanced value are added to the Estate of the Company, which thereby steadily increases in volume as well as in worth. The Company's Estate not only gains in individual value, but also shares in the great general advance in value of Mining property which has now commenced in the San Juan Region, consequent upon the extension of the Denver and Rio Grande Railroad into that District.

The Rico Silver Mining Company is carefully managed at a small expense, and purchasers of its Working Capital Shares may reasonably look for large returns from the Investment. Profits of from 50 to 100 per cent. per annum are anticipated.

Prospectuses, and other information, will be sent, post free, on application.

J. J. WEST, President.

January 10th, 1881.

245, WABASH AVENUE, CHICAGO, U.S.

AMERICAN MINES & ENGLISH CAPITALISTS.

Anyone who thinks of putting money into Mining can, by writing to me, have sent, post free to his address, a CIRCULAR, which will give him Valuable Information, Points of Financial Utility, and Practical Views regarding Mining Investments generally, considered from a business standpoint.

J. J. WEST, 245, WABASH AVENUE, CHICAGO, U.S.

SPECIALITY GOLD AND SILVER LODES.

M. R. A. FORSYTH expects to ARRIVE in LONDON on the 25th FEBRUARY, when he will be ready to REPORT on GOLD and SILVER LODES in ANY PART OF THE WORLD. Twenty years' experience. City reference.

Letters to ALLAN FORSYTH, care of May's Advertising Offices, 159, Piccadilly, London.

Notices to Correspondents.

* * Much inconvenience having arisen in consequence of several of the Numbers during the past year being out of print, we recommend that the Journal should be filed on receipt; it then forms an accumulating useful work of reference.

CORRESPONDENCE.—All business letters should be addressed to "THE EDITOR," and not to individuals. Private letters, except for the Proprietors, should not be sent to the office at all, as it must be distinctly understood that all letters received are, however they may be addressed, regarded as connected with the business, and opened accordingly.

REPLIES.—"N. N."—Correspondents replying to letters should avoid the practice of repeating the statements to which they reply, as it unnecessarily lengthens their letters to an extent which often compels delay or rejection owing to the large demands upon our space.

A. IS IMPORTANT.—Aux Abonnés Étrangers du "Mining Journal."—Le prix de l'abonnement au Mining Journal pour tous les pays de la CONVENTION POSTALE INTERNATIONALE est de 35 frs. le port compris. L'abonnement est payable par anticipation, ou par mandat postale internationale ou par autre mandat sur Londres. Le montant, si l'on veut, sera touché à domicile la fin de l'année, mais en ce cas nous tirons à vue, sans avis, et sur le dos de la note. L'abonnement continuera sauf avis contraire.

MICA.—"H. J. C." (Plymouth).—There is not a very large supply, but, on the other hand, there is not a large demand. American mica is by no means unknown in the market; it is found in several States. The mica of commerce is limited in quality and quantity, and those using it fully understand the necessity of keeping control of the mines opened, and using all possible effort in gaining possession of all localities likely to prove of value. There is now an effort being made to raise capital to work some American mines. It is said that in Maine and New Hampshire mica exists in inexhaustible quantities; the enthusiastic mine prospector states mica is as common as country rock, but he fails to produce the commercial mica so much in demand; indeed, the demand is so rapidly increasing, and the number of mines producing the proper sizes and the requisite quantities decreasing, that for those engaged in furnishing commercial mica the industry promises to be profitable. In the general demand for mica, suitable sizes of the best quality command high prices, and must necessarily continue to command prices which will amply repay the investor; although hitherto no producers have been able successfully to compete with the Russians.

PLATE IRON AND TIN-PLATE.—Can any correspondent give titles and particulars of books similar to Rose's Guide to the Iron Trade, but treating more particularly of the manufacture of sheet and plate iron and tin-plate.—R. S.: Boston.

MEAR'S CHLORINATION PROCESS.—Will any correspondent state where the Review of the Gold Mining Industry in the United States, published by the Mear's Chlorination Company, can be procured in this country.—T. D.

NAST RHYNS.—"S. B." (Hodbarrow).—The London address of the company is 35, Queen Victoria-street. The mines are near Cwmystwith, Cardiganshire.

ISSUING SHARES AT A DISCOUNT.—"R. A." (City).—The legality of issuing shares at a discount is questionable; that is to say, if a capitalist purchases at a discount he will be liable for the balance in case of winding up. Such is the opinion generally held by counsel of reputation. But if the entire capital, or entire new capital, be issued at a discount all coming in would have to pay the balance, and, therefore, be on equal terms. If "R. A." be not prepared to pay the balance he should not touch the shares. The principle upon which the Courts give judgment is that as regards creditors clandestine arrangements by the shareholders amongst themselves have no legal effect. If a company consist of 50,000 shares of 12 each, creditors are safe to the extent of 50,000, but in this sense the vendors' fully-paid shares, if any, are recognised because a consideration real or supposed has been given. If the property be purchased for 20,000, in fully-paid shares, and the remaining 30,000 shares be issued at 5s. discount, the holders of these 30,000 shares would in the event of winding up have to pay up the 5s. per share which they had been allowed as discount in that account were required to satisfy creditors. It is always safer to deal with partly-paid shares than with shares purporting to be fully paid but issued at a discount, because in the latter case there is the balance of liability plus the cost of litigation likely to arise with respect to it.

MEXICAN MINES.—"Miner" (Camborne).—You no doubt refer to Chihuahua (which is pronounced Chee-wah-wah), which was very favourably referred to as a mining district by several correspondents of the Mining Journal.—Mr. J. H. Clement, and probably some of the Tregellas and Tregonings—some 10 or 12 years since. Chihuahua and the adjoining States are now likely again to attract attention owing to the opening of the Southern Pacific Railroad in New Mexico. Lands, mines, and mining real estate are not taxed in Mexico, the only impost being a Mint tax on bullion. Mining laws there are more liberal than in the United States. Mining and agricultural machinery are introduced free of duty. The climate in the mining regions of Mexico is favourable to outdoor operations during the entire year. The richest mining districts are those near the northern borders of the Republic, where an abundant supply of timber for mining purposes is found near the bases of the detached mountains in which the metalliferous veins are found. The States of Sonora, Sinaloa, and Chihuahua are in this respect more favoured than Arizona. It is a fact, perhaps not generally known, that extensive and valuable deposits of coal exist in Northern Mexico, which the projected railway system will soon render available. One of the difficulties encountered in Northern Mexico, however, notwithstanding its semi-annual rains, is a scarcity of running streams, though in some sections water is found in great abundance. In acquiring mining or agricultural property there, it is important to secure a supply of water to ensure success.

GERMAN SUBSCRIPTIONS.—By authority of the Imperial Postmaster General subscriptions for the Mining Journal will be received at every Post Office in the German Empire. All that is now necessary is to pay to the local postmaster is 3½ marks quarterly in advance, and the Mining Journal will be delivered free at the subscribers' address.

AN DEUTSCHEN ABONNEMENTS.—Das Mining Journal, das in der Zeitungs-Preisliste der Deutschen Postverwaltung für 1881 unter 464 Seite 159 verzeichnet ist, bei jeder Deutschen Postanstalt für den vierteljährlichen Abonnementspreis von M 8.50 bezogen werden kann.

DEEPEST MINE IN ENGLAND.—"Bob Brerley" (Preston).—You will find the depths of the principal deep shafts in the world in a letter on "Ancient and Modern Mining Engineering," published in the Mining Journal of Nov. 27. The deepest in England is the winding shaft of the Rosebridge Colliery, near Wigan, which is 2458 ft. At Spereberg, near Berlin, a bore-hole has reached the depth of 4175 ft. The deepest perpendicular shaft at present in existence is the Adalbert shaft at Příbram, in Bohemia, 3280 ft. There is no shaft or bore-hole a mile deep.

Received.—"J. B. A." (Adelaide): A fine sample of asbestos—"E. J. B." (West Holway): There does not appear to be any cause for complaint this week—"G. B." (Ruby and Dundee): "G. L."—"A. J." (Mining in Spain—Asturias): Next week—"Another Largely Interested" (Ruby and Dundee): Too late—"J. M."—Thanks—"S. P. R."—"H. C." (Mechanical Locomotion on Tramways): See the notice of the trial of Colonel Beaumont's Compressed Air Locomotive in another column.

THE MINING JOURNAL, Railway and Commercial Gazette.

LONDON, FEBRUARY 19, 1881.

PURIFYING WATER FOR BOILERS AND MANUFACTURING PURPOSES.

The importance of clear and soft water for boilers as well as for manufacturing purposes cannot be over-estimated, yet it is a matter that has received little or no attention from those who are most interested in it. It is well known that incrustation of boilers is principally caused by the matter in the water, and whilst nostrums are provided for cleansing the boiler little or no notice has been given to the cause itself. The pollution contained in water can be absorbed in several ways, by means of brick, shale, sand, and boulders. It has been found that dirty water, impregnated with all kinds of material, on being run through coal which has caught fire came out quite clear. At one place we recollect no less than 3000 tons of slack caught fire, when a portable engine and a pump were brought into use, when an immense quantity of filthy water was thrown upon the burning mass. The water ran through the coals, and came out as clear as could be desired. It is, therefore, evident that the debris sent out of our metalliferous and other mines could be so far utilised as to keep the boilers clean and preventing their corrosion. One important fact on the subject has been demonstrated, and that is that impure water thrown a certain height into the atmosphere and allowed to fall in spray lost nearly all its obnoxious ingredients. This was found to be the case in some experiments made in Paris, where it was found that the liberation of the gases and the chemical action of the oxygen led to the water being deprived of all its impurities. Mr. PATERSON, an engineer who has paid great attention to the subject, says that all the difficulties as regards the use of impure water can be overcome by what are known as "settling tanks." He considers that instead of drawing clear water from a purified source, utilising and then discharging it into the river, the foul water may be drawn from the polluted river, passed through settling tanks, and then discharged into the stream or river without further treatment. By this means those requiring water for steam and other purposes would be able to compete with those whose supply of pure water was more abundant and accessible.

In the case of floods such as we have recently experienced, whether a stream be seriously polluted or not, its waters gathered from the upper carboniferous formation, the surface being of a soft material, and throughout which nearly all our great manufacturing centres are distributed, the water should be passed through still ponds, where the premeditated sediment would be settled. In the West Riding of Yorkshire the River Calder is known to be highly polluted by every known species of refuse, oily matters, acids, vegetable fibre, ash, and many chemicals, and in one portion of it there is the sewage of a population of 400,000 persons, yet the water, foul and dirty, of a blue colour when seen to any depth, can be rendered by settlement alone almost perfectly clear, without taste or smell, and well adapted for all purposes where soft water is required. In some of our manufactures we are told that the effect of suspended gritty matters in water not only tarnishes the colour and finish of some goods, but takes away from them that soft and silky finish so desirable. Settling reservoirs are the great essentials for giving clear water, and so keeping boilers clean, and preventing woollen and other goods from being tarnished. Mr. PATERSON, who has had great experience in the making of reservoirs, appears to use concrete as the principal material. In making a reservoir the outlet pipe passes through the bank at a level of 18 in. above the bottom, and is then connected with a floating pipe by means of a flexible joint made of strong vulcanised india-rubber secured at each end by a wire fastening. The pipe, 16 ft. in length, was made of galvanised copper, the funnel being mouth-shaped, and the pipe floated at a uniform level of 12 in. below the surface by a hollow ball of galvanised copper 18 in. in diameter. Two guide posts fixed in the floor of the tank serve to keep the pipe in a lateral position during stormy weather, and to prevent any stress or working of the joint, the outlet pipe was of the simplest kind, and rising or falling with the level of the reservoir at a constant depth of 12 in. below the surface, offered the readiest and most effective means of drawing off for use the clearest portion of the water, free from scum, silt, and all other matters which float on the surface, and yet deriving the full benefit of the settling power of the tank, as represented by the area and depth. In constructing reservoirs much care and engineering skill are required, and in one case we have a section that may well be followed. The bottom consists of clay puddle 12 in. in thickness, well rammed and consolidated by the passage of a heavy roller over it, covered with 12 in. of concrete, finished off with an accurate plane surface.

The inner slopes formed a battery of 2 to 1, and consisted of puddle 2 ft. thick at the bottom and 18 in. at the top, covered with 9-in. stone pitching, bedded in a layer of gravel 3 in. thick, designed to protect the puddle from the effects of sun or wind. For greater strength, where required, the pitching for a length of 5 ft. measured up the slope could be advantageously laid in mortar all round. A reservoir so constructed was tested for several days, and was found to leak to the extent of 1 in. per diem. The leakage, everything below the concrete having been found to be water-tight, dry pitching was adopted, which proved most successful. The making of concrete is an all-important matter in the construction of reservoirs; perhaps the best composition is—one part of ground blue lias lime (Barrow and Warwickshire), 1½ part of sand, and 4½ parts of clean gravel or broken stone. The above proportions are the result of repeated practice as well as experiments, and have proved in every respect most satisfactory, demonstrating that for the purpose of protecting the puddle and maintaining a true plane surface on the sides and bottoms of tanks any greater quantity of lime was unnecessary, unless under special circumstances of time and weather. In a reservoir, said to be a model one, the specification required that all

stone should be broken so as to pass through a 2-inch ring, the whole of the material to be thoroughly mixed on a proper platform, first in a dry state, so as to cover every stone with the lime, and just enough water to permeate the whole mass. After being thoroughly mixed it should be used immediately, and well pounded to its level before settling. No concrete should be laid during wet or frosty weather, and the portion recently laid should be protected by covering from the effects of frost or heavy rain. Where there is no natural stratification, and the bed is formed of sand, boulders, and gravel, in order to impound water the whole surface and make of the interior of the reservoir should be made watertight. The whole question of water for the supply of boilers, and for manufacturing purposes, is a most interesting one, and in these days of scientific research it is rather surprising that so little attention has been paid to it.

THE COLONIAL DEMAND FOR OUR RAILS.

The decline observable in January in the exports of rails from the United Kingdom was entirely attributable to the, at any rate, temporary feebleness of the colonial demand. The shipments of our railway iron to India fell off considerably in January, and the reduction in the exports in this direction entirely accounted for the fact that the general deliveries of British railway iron on colonial account in January did not exceed 35,135 tons, while the corresponding figures for January, 1880, came out at 46,778 tons. The colonial shipments of railway iron for the first month of the last three years may be stated as follows:—

Colonial group.	1879.	1880.	1881.
British America ... Tons	401	1,085	298
British Africa	822	278	398
British India	4,095	16,486	4,443
Australasia	6,559	2,945	5,840

Total 11,877 20,794 10,979

The shipments of the past month were thus decidedly flat as regards their amount, but we have not to go very far in search of the cause of this state of affairs. We find it in the remarkably bad weather which prevailed during the latter part of January, 1881, and which, undoubtedly, had the effect of checking very materially the movement of commodities, iron included. We may expect to witness a considerable revival in the shipments when the returns for the current month as well as those for March become available for examination, as every day, with the gradual advance of the spring, climatic difficulties must become less formidable, until they disappear altogether.

We have entered for a brief space into these considerations, because we cannot for a moment suppose that the demand for our railway iron in the principal British colonies has become less active, or that the purchasing power of the colonies has become weaker. Never probably was there more activity observable in the Canadian railway interest. Never was the necessity for improved and extended railway communication in British South Africa more fully recognised. Never was the Anglo-Indian Government more resolved upon increasing its hold upon British India and more fully developing its resources by means of railways. Never were the Australian colonies probably in a better general condition, and never were their various Governments more disposed to proceed with the construction of the numerous sections of railway which still remain to be established within their vast areas. Never, again, was the credit of the various colonies at which we have been glancing so good. Canadian 4 per cents. are at 104; Indian 4 per cents. at 105; Cape of Good Hope 4½ per cents. at 101; New South Wales 4 per cents. at 101; New Zealand 4½ per cents. at 97; Queensland 4 per cents. at 96; South Australian 4 per cents. at 99; and Victorian 4 per cents. at 101. It is true that Cape of Good Hope bonds have been a little weakened by the unfortunate course which political events have lately taken in British South Africa. It is true, also, that the old women of the Press have done their best, although with no very great success, to fritter away the credit of New Zealand. Still colonial credit, as a whole, is excellent, and it is likely to become still better now that land is so discredited as an investment, and now that emigration to the colonies is gradually increasing by reason of the miserable depression to which the home agricultural interest has been reduced. With colonial prospects so hopeful, with colonial credit so strong, with colonial administrations so intelligent, we cannot doubt that a good demand will prevail for our railway iron on colonial account during 1881, although it must be confessed that the returns for January are not particularly encouraging.

MINE OWNERS AND THE EMPLOYERS' LIABILITY ACT.

The first case in which mine owners have been mulcted in damages under the Employers' Liability Act was heard on Monday last in the Lincoln County Court, having been remitted from one of the superior courts. Charles William Paulger brought an action against the North Lincolnshire Iron Company, who have blast furnaces in the Frodingham district, and work the ironstone at the same place, to recover 500l. damages for injuries sustained through the defendants' negligence. The lad was engaged in the office, when a wagon from a drop fell into the office and broke his arm. The jury found for the plaintiff, with 275l. damages. Considering the amount of injury done the damages certainly appear to be excessive, and may well be asked what they would be in case of loss of life. We therefore, think that there should be some limit to the amount which a jury should be able to award for accidents against employers. As it is the case we have called attention to show that the Act may be made to work most harshly towards those who are responsible for the acts of others.

At the same time it shows how necessary it is, more especially in mining operations, that there should be strict supervision in the carrying on of the work, and that persons placed in authority should be in every respect trustworthy. The chief of a mine should know the character and skill of the officials in whatever position they may be placed, so that for the sake of economy and safety he should be able to find out the right men for the right place. In another direction the carrying out of the Act will cause a considerable change in the working of stone mines or quarries. In one district in the West Riding it has been usual for the men working in such mines to be let down the shafts and drawn up by a single link chain, whereas Rule 12 of the Metalliferous Mines Act distinctly states that such a chain shall not be so used. It is needless to say that using a chain for drawing up the mineral as well as the men is attended with great danger, and those who continue to adopt it in addition to the penalties to which they are liable run the risk of having to pay heavily under the Employers' Liability Act. Of this we have just had another illustration, and one that is likely to be most costly to a well-known firm of mineowners. It was a case heard on Saturday last at the West Riding Court, Halifax, at the instance of the Government Inspector of Mines. Messrs. J. and S. Cliffe, mineowners, were summoned for using a single link chain for the drawing up of the men and the mineral as well, and it was elicited by the prosecuting counsel that nearly all the other owners of stone quarries or mines in the Brighouse district were all doing the same thing, in contravention of the Act of Parliament.

In the case of the Messrs. Cliffe, a short time since eight men were being drawn up a shaft when the chain broke, and the men were precipitated down the shaft a distance of about 20 yards. All the men were more or less injured, and two of them had since died. It was not contended that the neglect to comply with the Act was not wilful, but, at the same time, it was contrary to the Act of Parliament, non-compliance with which led to the imperilling of the lives of the workmen. The Bench imposed a fine of 5l. and costs. Here the liability of the employers has been clearly proved, so that no doubt they will have to pay a considerable sum in the shape of compensation to the representatives of the men who were killed and injured. But this compensation under the Employers' Liability Act will be enforced will also be the means of doing away with a most dangerous practice, but which could be easily obviated without any great expense. The death of the two men will, therefore, be the means of ensuring greater safety to those now working in the stone mines of the West Riding of Yorkshire. But we certainly should have thought it was not necessary two men should be killed and

Dealing only with the modern steam-engine, it has been unnecessary to Mr. Galloway to go farther back than the scientific discoveries of the seventeenth century, when the true nature of a vacuum was ascertained, and the discovery of atmospheric pressure explained how it is that "Nature abhors a vacuum." A brief outline of the experiments in connection with the weight and pressure of the atmosphere naturally leads to the consideration of the attempts made to derive a new motive power from the force exerted by the atmosphere in rushing into a vacuum. This brings us to the third chapter, which introduces Papin in London, and describes his first pneumatic engines. Papin's removal to Marburg, and his proposal to employ steam in lieu of gunpowder to produce a perfect vacuum under a piston at small cost, is dealt with in the next chapter, whilst the fifth chapter brings Newcomen and Savery upon the scene. Thomas

Newcomen becomes acquainted with the proposals of Papin, and contemplates the construction of an atmospheric engine; but he is anticipated by Capt. Savery, who obtains a patent for an engine for raising water by fire. Although put in operation and tested previous to 1700, Savery's engine is in all essential particulars identical with the pump-engine introduced within the past few years as a new invention. It did very well for gentlemen's seats and the like, where economy was of little importance, but for mines and elsewhere, where the water has to be raised to a great height or in large quantities, it was altogether inapplicable.

Papin's removal from Marburg to Cassel, his experiments with high-pressure steam, and the closing years of his life, which ended no one knows when or where, occupies the succeeding chapter, and in those which follow are accounts of Newcomen's atmospheric engine being brought forward as an improvement on Savery's fire-engine. The atmospheric engine was at once adopted for draining coal mines, and rendered great assistance to the mining community, and the use of atmospheric engines continued to extend until the death of Newcomen, which is recorded at the close of the ninth chapter. The atmospheric engine during the period which intervened between Newcomen and Watt, the invention by James Watt of the separate condenser, and his employment of steam instead of the atmosphere to act on the piston, his single-acting steam-engine, his double-acting steam-engine, the projects for applying the steam-engine to propel carriages and boats, and concluding remarks regarding Watt's engine, and rival engines occupy the next half-dozen chapters, and this brings us within what may be termed the region of modern practical success.

The steam-engine, after the expiration of Watt's patent and Trevithick's high-pressure engine and steam carriage, are next considered, and the remaining chapters are devoted to the accounts of the application of the locomotive engine on railways, the renewed attempts to employ locomotive engines on railways and its successful accomplishment, and to the history of the early days of steam navigation. From this outline, and when it is stated that the volume only occupies about 250 small octavo pages, it will be readily understood that the subject is systematically and fully, although concisely, treated; and Mr. Galloway may fairly be congratulated upon supplying a larger amount of reliable information than is anywhere else obtainable with so little reading.

THE SOUTH WALES INSTITUTE OF ENGINEERS.

At the 23rd annual meeting of members held at the Royal Hotel, Cardiff, the chair was taken by Mr. James McMurtrie, the president. Several new members were admitted, and signed the roll-book, and others were declared to have been duly elected. The election of office bearers for the session 1880-81 took place, the gentlemen nominated at the October meeting having been confirmed unanimously and declared duly elected. The annual statement of the position of the Institute was read by the secretary, and adopted. It showed that the financial position of the Institute was highly favourable. The question of the desirability, or otherwise, of applying for a Royal Charter of Incorporation was brought before the meeting, and a resolution adopted to make application for a charter, the cost to be borne out of current revenue, aided if necessary, by special contribution.

The following papers read at previous meetings were then discussed:—"On Safety-Hooks and Safety-Cages," by Mr. Stephen Humble. "Appendix on Safety Hooks and Safety Cages," by Hort. Huxham, F.G.S., M. Inst. C.E. "On Some of the Geological Problems of the Bristol Coal Field," by Mr. Handel Cossham, F.G.S. These discussions were closed. The discussion "On Diving and Diving machines; with a description of Fleuss' diving and breathing apparatus, and Foster and Fleuss' submarine and safety mining lamp for conducting operations under water, or in noxious gases, entirely independent of any communication with the atmosphere," by Hort. Huxham, F.G.S., M. Inst. C.E., was opened and adjourned.

Discussion "On the Clayband Ironstone, or 'Mine,' of the Northern Outcrop of the South Wales Coal Field," by Mr. Thomas Joseph; and "On Underground Horses," by Mr. W. D. Wight, were adjourned, in consequence of the absence of the authors. The following papers were afterwards read, and ordered to be printed in the "proceedings." "Notes on Compressed Air," by Mr. W. H. Massey. "On a Method of Working Steep Seams," by Mr. M. G. Johnson.

The members subsequently dined together at the Royal Hotel.

SOUND INVESTMENTS.

COAL AND IRON COMPANIES.—Having in recent circulars directed attention to this class of enterprise as a medium for investment, I am now in a position to amplify my recommendations as a result of my visit to the two properties which have more particularly come under my notice, and I would urge all those who may be inclined to invest their money in either of them, viz.:—the Rhymney Iron and Llynvi and Tondy Companies—to satisfy themselves by a personal inspection that the position and prospects of these undertakings are all that I represent them to be.

RHYMNEY IRON COMPANY.—This property is situated about 20 miles from Cardiff, and is, therefore, in the very centre of the coal and iron trades of South Wales. The company has been established since 1836.

The capital as by the last balance-sheet consists of the following:—
£ 639,734 of Ordinary Shares.
91,670 of 6 per cent. Debentures.
77,450 of 7 per cent. Debentures.

To represent this capital, the company possesses assets which, in my opinion, are worth a much larger amount. It owns about 1200 acres of freehold, including the whole of the flourishing little town of Rhymney, and further coal mining rights in respect of which they pay a small royalty. Upon this freehold are situated several coal mines and new Bessemer works, with three large converters for manufacture of pig-iron into steel. In addition to this there are two other converters in process of erection, capable of turning out over 2000 tons of steel per week, and which will be completed in March.

Apart from the enormous amount of fixed plant, the company owns 16 locomotives and 800 wagons.

The coal property is of exceptional value, as the present output amounts to 12,000 tons per week; but the point of special interest to intending investors is that since November last there has been an advance of 1s. per ton in bituminous (or house) coal, and 1s. 6d. per ton in steam coal.

All the works are in splendid condition. The capital is small considering the present productive powers of the company. There are plenty of orders in hand to keep the works going full time, and the company is better prepared now than at any other period in its history to take advantage of the prosperity evidently dawning upon the coal and iron trades.

Notwithstanding the extraordinary depression in recent years, the last balance-sheet of this company published in June, 1880, showed an amount of profit which enabled the directors to pay a dividend of £1 per share. They at that time carried forward an amount of £51,930 of undivided profits. With the present greatly improved prospects of the coal and iron trades, the 7 per cent. debentures of £100, at about £110, are an exceptionally attractive investment, and those who seek for sound home securities paying a good rate of interest may safely direct their attention to this stock.

To those, however, who look more for an ultimate increase in capital value than immediate income, the £50 shares at the present price of £35 will, doubtless, be very attractive.

LLYNNVI AND TONDY (COAL AND IRON COMPANY).—This property is situated about four miles from Bridgend, and like the Rhymney will well repay the trouble of a personal inspection.

The capital consists of the following:—
£ 172,000 of Ordinary Shares.
86,000 of 7 per cent. Preference Shares.
208,928 of 6 per cent. Debentures.

For this the company owns 200 acres of freehold and nearly 8000 acres of valuable leasehold, underlying which it is estimated there are

some hundreds of millions of tons of steam coal of the best quality to be found in South Wales. There are also on the Llynvi estate large deposits of the celebrated black band iron ore, which is so cheaply worked as to enable the company to turn out pig-iron at a very low cost. There are also several hundreds of coke ovens as well as coal washing and grinding machinery of the most perfect description. There are nine blast-furnaces, four forges, and seven rolling mills, which at the present time turn out from 900 to 1000 tons of finished bar-iron per week.

The quantity of coal annually raised is over 500,000 tons, of which 230,000 are sold, the balance being used in the ironworks. Owing to improved appliances it is anticipated the increased quantity of coal available for sale will be about 100,000 tons annually. The value of the vast area of coal owned by this company will become apparent now that the selling price has advanced from 1s. to 2s. per ton since last year.

In addition the company receives £3000 a year from ground rents and cottages.

The report for the past half-year shows a very satisfactory state of affairs. After paying the interest on the debentures and preference shares and putting aside £9705 17s. 9d. for the redemption of debentures, there is sufficient to pay 4 per cent. on the ordinary shares and to carry forward £2825 17s. 3d.

Under such circumstances, and with the greatly improved aspect of the coal and iron trades, the 7 per cent. preference shares (£5 each, £4 paid) at the present price of $\frac{3}{4}$ premium, including the past half-year's dividend, must be regarded as exceptionally cheap, and here, also (as in the case of the Rhymney) the ordinary shares are deserving of attention by those who look more for future than immediate return.

These shares are at present only dealt in on the Manchester Exchange, but steps will at once be taken to obtain a quotation on the London market.

10, Tokenhouse Yard, E.C., Feb. 16.

THE GREAT DISCOVERY AT SOUTH DEVON UNITED MINES.

The excitement of the week in the mine share market has unquestionably been the great discovery at South Devon United Copper Mines, and from the subjoined reports and numerous telegrams received in London a confident opinion has been formed that the improvement is likely to be permanent. It is true that there are some who think that the discovery having caused shares to rise from $1\frac{1}{2}$ to 6, $6\frac{1}{2}$, which they have reached during the week, the present price is high enough, but, on the other hand, there are many equally competent to form an opinion who express their full confidence that "they must go to 10L, 20L, or over, and that at no very distant period, and if the discoveries go on as now, probably a great deal more." Why not? it is asked, considering that when East Russells went from 2s. 6d. per share to 4L or 5L, and it was then said they would go down again, but they gradually went up to 30L to 32L. Then there was East Caradon, which were at 5s. to 10s. per share (and in which the present Postmaster-General, Mr. Fawcett, and his father and friends held largely, and do now, it is believed), rose to 6L or 7L, and it was laid down that they must come down again, but they also gradually went up to about 35L to 40L per share. So also South Caradons, from 2L or 3L per share to 500L or 600L; Devon Consols, from 1L to 800L; and scores of other great prizes we could name, and this discovery at South Devon United is only now in its infancy, and such a prize has not been met with in Devon or Cornwall for many years. Subjoined are the reports above alluded to:—

Buckfastleigh, Feb. 17.—The lode in the 110 fathom level is 6 ft. wide, with a value of fully 40L per fathom; this is another grand discovery, evidence of the same rich lode we have at the 100 ft. level; this cannot be over-estimated, and will in a very short time, in my opinion, be of equal value to the 100, from the fact of its constantly improving, and now producing splendid rocks of ore, and equal in quality; this grand discovery is of great value. In the 100 end east the lode so far as seen is fully 10 ft. wide, composed principally of rich copper ore and a little spar, with a value of 180L per fathom. This is a most magnificent lode—a mass of copper; I never saw anything so rich, and it is daily improving, and I find in cross-cutting south through the lode that it continues back west in the side of the level for many fathoms in length—in fact, I am not yet prepared to say how far it does go in this direction; this part of the lode independently of the end is worth 60L per fathom. This further improvement adds greatly to the value of the ore discovered in this level. In the slope in the back of the 100 the lode is 4 ft. wide, with a value of 12L per fathom. The lode in the 90 end east is 5 ft. wide, with a value of 35L to 40L per fathom; this end is improving every foot drawn both in size and value, and is equal in appearance to the 100 when this deposit was intersected, and will I am sure in a short time go into it. In No. 1 slope, in the back of the 90, the lode is 3½ ft. wide, with a value of 14L per fathom. In No. 2 slope, in the back of the 90, the lode is 2½ ft. wide, with a value of 10L per fathom. The lode in the 80 end east is getting more settled as it is being extended east from the small crossing, and is producing good stones of ore. My experience in this mine is that when the lode makes good close up to the crossing, as this has done, it is found equally so productive the other side; this lode is gradually improving, and will continue to do so. In No. 1 slope, in the back of this level, the lode is 4 ft. wide, with a value of 13L per fathom. In No. 2 slope, in the back of this level, the lode is 2 ft. wide, with a value of 14L per fathom. In No. 3 slope, in the back of this level, the lode is 6 ft. wide, with a value of 16L per fathom for copper and mundle. Surface: All our machinery is working very satisfactorily, and we are still busy sending away copper ore for our next sampling. Since the date of my last report a very good improvement has taken place in the value and workings underground of this mine. The great and valuable discovery in the 100 end east, of which I fully informed you by telegram and letters at the time and since, continues to open out splendidly, and is a most wonderful lode; its equal I have never seen, and I am pleased to inform you that all I have written and said in reference to this lode is to the fullest extent true and reliable; it is, indeed, a grand discovery. I am pleased to say we have cut a very valuable lode in the 110, which improves every foot driven, and will soon be equal to the 100 end in size and value. The 90 end has also improved very much, and has now a valuable lode, but have not yet reached the great mass of ore cut in the 100 end, but I have no doubt we are not very far from it. If this should go into the great deposit, of which I have no more doubt than I had that we were going into something extraordinary at the 100, which has proved correct, we shall have a mine that its value will be difficult to estimate. All the other levels and slopes are looking very well—in fact, nothing can be better. We have ore in every point of operation, and reserves of great value throughout the mine in sight, with several hundreds of tons in different levels broken and waiting to come to surface. I am glad the new shaft is to be commenced immediately. I do hope the directors will push on with this most important work vigorously, for, as I said in a former report, it will not only in all probability open up extensive and valuable ore ground, but will give facilities that I could with ease send to market at least 1000 tons of ore monthly. We have the ore discovered in sight; therefore, we do not want to seek for it. We ought and must have, with all speed, better and quicker means of getting it to the surface.

We are with our present limited hauling power doing our best, but we cannot keep pace with anything like the quantity of ore this mine is capable of returning. I have the greatest satisfaction in saying we have a most important and valuable mine, the value of which has within the past ten days wonderfully increased from the great discoveries made, and that there is, and no mistake, a most prosperous future in store for the company, and in saying this I would remind you that we are now only working one-half of the property of the company, or Brookwood portion, while the eastern or Emma portion, we are doing nothing, and the western ground has always been considered, and doubtless is, as valuable a portion as any of the company's property; it has yielded many thousands of tons of splendid ore, and paid very large dividends to the old company up to the time of the water getting in and drowning them out, and will no doubt do so again when we commence working, for there are very fine lodes of known value, and I have no hesitation in saying, when the directors can see their way clear to commence operations on this western or Emma portion of our property, we shall open out as good a mine as we have now in the eastern or Brookwood portion; our managing director, Mr. Peter Watson, has known this property for some time, and will doubtless bear me out in what I have said, therefore with such a property and such prospects who can doubt our future great success?

WILLIAM HOOPER.

Feb. 17.—I had last week the pleasure of informing you of a most important discovery of ore in the 100 east; that great discovery has gone on improving ever since, and has now opened out to a wonderful mass of copper such as I have never before seen, and it still continues to improve. I have now the great satisfaction of being able to report a very great improvement in the 110, of which I telegraphed you last evening and forwarded samples; I fully believe this will prove as good a lode as the 100, and lead into a very large deposit of ore, and is not yet quite equal to that great discovery, but the way in which it is opening out it will soon be so, and is like the 100 going into virgin ground. It is a beautiful lode, and greatly increases the present value and future prospects of the mine. The 90 level, I am pleased to say, continues daily to improve, and cannot, I am sure, be far away from the extraordinary lode discovered in the 100. Should we really cut into this, of which I have not the slightest doubt, who can say the value of our property and the company's future. This grand discovery in the 110 you cannot be wholly unprepared for, as I have for some time, and particularly the last week, told you I hourly expected it, but until you really cut these lodes it is never certain; however, we have it here, and you shall have it in the 90, and it will give us a run of ground of ore of immense value, as it is all going into virgin ground. What a prospect it opens out of great success in the future for the South Devon Mine. Of course it is a matter of sincere congratulation to all concerned, but to me it is a source of the greatest gratification.—WM. HOOPER.

P.S.—I omitted to mention that Mr. Henderson, civil engineer, from Truro, was here on Monday, Tuesday, and Wednesday, dialling the mine and determining the site for the new shaft. That has been fixed, and we shall now, I hope, proceed vigorously with its sinking, and keep at it night and day with as many men as I can conveniently utilize. This important work will, I

am sure, open out new and valuable ore ground and give us what we want—sufficient hauling power.

Wire from pursuer to managing director, Tavistock, 1-4 P.M., received here 1:24:—"Splendid rock ore from 110 this morning will produce 20 per cent. copper. Great excitement here."

Telegram from Capt. Hooper to Peter Watson, sent from Buckfastleigh 11:30 A.M., received in London office 12:30 P.M.:—"New lode 110 much improved, worth now 50L per fathom. Grand discovery this. Looking splendid. The 20 improving rapidly."

THE RUDIMENTS OF CIVIL ENGINEERING.

The thoroughly sound and practical character of Law's Civil Engineering and Burnell's Hydraulic Engineering, forming part of Weale's Rudimentary series, is generally acknowledged, and the 30 years reputation they have enjoyed will certainly not be lessened by the admirable manner in which Mr. D. K. Clark, M. Inst. C.E., has brought the information down to the present time in the sixth edition just issued by Messrs. Crosby Lockwood and Co., of Stationers' Hall Court. The progress made within the period mentioned has been considerable, especially in the practical development of the scientific principles of engineering. Elementary principles and construction are fully dealt with in the introductory section which embraces chapters on the business of the civil engineer, materials employed in construction, different kinds of construction, equilibrium of abutments and walls, and methods of forming foundations. Then there are three sections on Inland Engineering, Marine Engineering, and Hydraulic Engineering respectively. The 23 chapters on inland engineering include chapters on common roads, stone, wood, and asphalt pavements, railways, tramways, canals, rivers, bridges, and tunnels.

The section on marine engineering treats of wind and waves, currents, sea defences, embankments, harbours, breakwaters, piers, quay walls, and docks. And under the section devoted to hydraulic engineering are chapters on the supply of water to towns, reservoirs, filtration, distribution, raising water for water supply, conduits, aqueducts, drainage of land and towns, reclamation of land, and irrigation. The value of the work is much enhanced by the manner in which the additional matter has been added; it has been incorporated with the text but enclosed in brackets. By this means the work forms, as it were, a text book and a history at the same time, and furnishes an enormous fund of information with the smallest possible amount of reading. Mr. Clark may fairly be congratulated upon the manner in which he has performed a difficult task, but he will be well repaid in securing a large circulation for the volume.

FIFTY YEARS' HISTORY OF THE IRON TRADE.

A handsome little chromo-lithographed and gilt table showing the fluctuation of the various kinds of iron during the past half century has just been issued by Mr. Fossick (London: E. and F. N. Spon, Charing Cross). In an accompanying circular the leading facts shown in the table are stated in words, so that the movement in the several kinds can be associated with the cause of such movement. Among other important points shown are the periods and cycles of upward bounds and periods of depression. Thus the chart shows that in 1836—probably owing to the construction of railways—a great upward movement took place in prices. A more or less gradual fall followed until 1843, when renewed building of railways again sent up prices, as we have shown in detail, till the highest point was reached in 1845. Again there was a decadence, until the lowest point was touched in 1852, when the superabundance of bullion began to push up prices, until in the early part of 1853 we have another apex. Comparative steadiness for three to four years despite the Crimean war was followed by renewed depression, until the lowest point was reached in the year 1861. Company-mongering and trade activity in 1863 drove up the price, until another apex was reached in the following year.

The trade depression subsequent to the panic in 1866 was followed by a great upward bound soon after the conclusion, in 1871, of the Franco-German war, until in 1872, and again in 1873, the highest points ever touched in the history of this chart are shown. The last few years will be in the reader's recollection, and when we mention that the price in 1879 descended very nearly to the prices of 1843 and 1852 the severity of the recent trade depression will be readily understood. A better idea of the fluctuations in the iron trade can be obtained in a few minutes from this chart than reference to books, &c., would give in as many days; and it is easy to see why in this trade enormous sums are by boldness and good judgment, combined with good fortune, occasionally realised in a very brief period.

THE TEHUANTEPEC SHIP RAILWAY.

It seems that the Panama Canal is not to be the only means of intercommunication through Central America between the Atlantic and Pacific Oceans, for the Mexican Government has given Capt. J. B. Eads the most liberal concession it has ever granted. It gives him the right to construct the ship railway on such line as he may determine, and he is to be entirely untrammelled in the plans and execution of the work, which is to be commenced within two years from the date of the grant, and completed within 12 years. The concession grants a right of way across the Isthmus $\frac{3}{4}$ mile in width, which width is increased, wherever stations are required, to 1 mile. It gives him the right to improve such rivers and harbours as he may deem proper, and to collect liberal tonnage tolls from vessels entering them. He is also to be entitled to such compensation as may be agreed upon between his agents and any vessels in transit, for dockage, repairs, or cleaning when needed by them, and to operate a telegraph line and an auxiliary freight and passenger railway line in connection with the ship railway. In addition, the Government grants him a subsidy equal to 1,000,000 acres of public lands, to be located on the Isthmus or elsewhere, in aid of the construction of a suitable harbour on the Pacific Ocean. It also gives him the right to consolidate the Tehuantepec Railway, now being constructed by M. Leonard and others, with the ship railway on such terms as may be agreed upon between them.

But the most remarkable feature is that the concessionaire is granted the right to hypothecate the revenues of the road to any other Government which he may select to aid him by money or guarantees in its construction. It gives to such Government, in case of any default on the part of the company to such Government, the right to intervene through the Courts of Mexico, and have receivers appointed to ensure the faithful application of its revenues in accordance with the terms that may be agreed upon. No hypothecation or conveyance of the grant or of the works themselves, or of the lands, however, can be made to any foreign Government without invalidating the concession. The route across Panama, which is distant 1200 miles from Tehuantepec, is called in Mexico the French or European route. Ships from New York to San Francisco would save about 1500 miles by going by way of Tehuantepec instead of by Panama. The one route is through the Gulf of Mexico, and the other through the Caribbean Sea. From the mouth of the Mississippi to California by Tehuantepec is 2300 miles less than by Panama.

CROOK BURN.—It is expected that the shaft in course of sinking at this mine will be completed in about a fortnight. The limestone at the bottom is thicker than usual. It is now sunk into 4½ fms., and not yet through it. When this is done drifts will be set on to cut and work the vein seen in the shaft sinking (in shale), and also to cut the No. 1 Green Hurth Vein expected to be near at hand. The water to pump is much less than usual; but whether this arises from the extreme frost, or it is going away in the limestone sill, is not yet certain.

THROAT IRRITATION.—Soreness and dryness, tickling and irritation, inducing cough and affecting the voice. For these symptoms use Epps' Glycerine Jujubes. Glycerine in these agreeable confections, being in proximity to the glands at the moment they are excited by the act of sucking, becomes actively healing. Sold only in boxes, 7½d., and 1s. 1½d., labelled "JAMES EPPS and Co., Homoeopathic Chemists, London." A letter received: "Gentlemen—It may, perhaps, interest you to know that, after an extended trial, I have found your Glycerine Jujubes of considerable benefit (with or without medical treatment) in almost all forms of throat disease. They soften and clear the voice. In no case can they do any harm.—Yours faithfully, GORDON HOLMES, L.R.C.P.E., Senior Physician to the Municipal Throat and Ear Infirmary."

TO "CLIENTS" AND THE INVESTING PUBLIC.—Most deep, expensive, and comparatively exhausted dividend-paying mines should be evaded beyond five years' purchase; and others at "fancy" prices in anticipation and uncertainty should also be carefully avoided. A judicious and safe selection, however, may be made, especially in the hitherto neglected class. List and advice 10s. 6d., to be returned on business. H. B. RYE, 77, Old Broad-street, E.C.; and 14, Cambridge Terrace, Southend. Established 1845.

AMERICAN MINES REPORTED ON.

AN ENGLISH MINING ENGINEER AND CHEMIST, at present resident in the United States, will EXAMINE and REPORT ON MINES and MINING PROPERTIES. Has had a number of years' practical experience in most of the principal Gold and Silver Mining Districts of the West, and is fully acquainted with the best systems of Reduction and Smelting in use, and the actual cost of working. Has passed the sanguine stage of Mining, and is accustomed to base calculations on facts only. Good London references. For address and particulars, apply at the Railway News Office, 3, Whitefriars-street, Fleet-street, E.C.

WANTED, for a COLLIERY in the MIDLAND COUNTIES, an EXPERIENCED TRAVELLER, to ATTEND the LONDON MARKET, and to TAKE the SOLE CONTROL of the RAILWAY SALES. The highest references and security for the due fulfilment of duties will be required. Apply, stating salary required and giving references, to "Box No. 10," MINING JOURNAL Office, 26, Fleet-street, London.

MINE AGENT.

WANTED, an experienced and thoroughly-qualified MINING CAPTAIN, to TAKE CHARGE of a SILVER-LEAD MINE in the SOUTH OF SPAIN. One conversant with the Spanish language would be preferred. Apply, with full particulars as to age and previous employment, to Captain SAMUEL GEORGE, Radnor House, Redruth.

A PRACTICAL MINING AGENT, 36, holding good certificates for machinery, desires EMPLOYMENT where he could make himself generally useful. Drawing, Dialing, Assaying, French, and German. Worked nine years underground. Address, "Miner," MINING JOURNAL Office, 26, Fleet-street, London, E.C.

SECRETARY TO PUBLIC COMPANY, with twelve years' experience, seeks ENGAGEMENT in above capacity, or would UNDER-TAKE the DUTIES of ACCOUNTANT. Unexceptionable references. Address, "X 1010," Chronicle and Express, Wolverhampton.

WANTED, OFFERS FOR THE FOLLOWING:—
Ynysedwyn Company ... £10 Shares. Pandora Lead Mining Co. £2 Shares.
South D'Essey Mine ... 1 " Ladywell Mining Company, £1 Preference.....
Tyn-y-Fron Lead Mine ... 1 " Hultafall Mining Company ... 5 "
Caron Lead ... 2 " Bickton Silver-Lead Com. 1 "
West Craven Moor ... 1 " Ladies Dress Association.. 5 "
Crosswood Mining Land Company 1 "
Apply to WHITCOMBE and EMSON, 1, Gresham Buildings, Basinghall-street, London, E.C.

NEW PENROSE TIN AND COPPER MINE.—We draw special attention to the report of the meeting held at Helston. We recommend the shares at 20s. as the most desirable of all investments. Information may be had of the Secretaries, Messrs. THOMPSON and SON, Plymouth.

FORTESCUE (STANNAGWYN).—See Mr. Collins's analysis of the ore. The shares are £2 each, fully paid, and are very cheap. Messrs. THOMPSON and SON, of Plymouth, can sell a few. Those wishing information on Cornish industries can have a copy of "Sow and Reap" for February, post free, a publication which contains reliable advice.—THOMPSON and SON.

MESSRS. ABBOTT AND WICKETT, STOCK AND SHARE BROKERS, REDRUTH. ORDERS BY TELEGRAM PROMPTLY EXECUTED.

MR W TREGELLAS, 40, BISHOPSGATE STREET WITHIN, E.C. Deals in all descriptions of STOCKS and SHARES at close market prices, and is always in a position to do business in SANTA BARBARA, PITANGUI, and BRAZILIAN GOLD MINES.

PENNINGTON AND CO. SWORN BROKERS, 3, ROYAL EXCHANGE BUILDINGS, E.C. Transact business in every description of Stocks and Shares. ESTABLISHED 1869.—BANKERS: ALLIANCE.

TREVINE CONSOLS.—This mine continues to improve, and will, in our opinion, shortly occupy a prominent position. We most strongly advise immediate purchase of shares for a rapid rise. Price 25s. SPECIAL BUSINESS in Devonport and Tiverton Grey's Breweries, New Gold Run, Gold Coast, and Chapel House shares.

COMPRESSED AIR LOCOMOTIVES.—A preliminary trial of the compressed air locomotive invented by Colonel Beaumont, R.E., was tested on the Metropolitan Railway on Tuesday. The engine originally made for a tramway, started from the Chapel-street (Edgeware-road) Railway Works, and ran to Baker-street, where it was shunted on to the St. John's-wood line to pick up a carriage, which most of the party entered in order to continue the journey. The engine then ran from Baker-street to Moorgate-street. On the return journey, after a halt at King's Cross, the engine ran without a stop to Edgeware-road, the distance between the two stations, which is for the greater part an ascent of 1 in 100, being performed in eight minutes, or less than the average time taken by the ordinary trains. The total distance run, including the shunting, was about eleven miles, and the weight moved, including the engine itself, was about 20 tons. The engine commenced with an initial pressure of 1000 lbs. on the square inch, and when the run was finished the gauge showed a remaining pressure of 300 lbs. in the cylinders. The engine was perfectly under control throughout the trial, and was started and stopped with the greatest ease. The result was considered highly satisfactory, and further trials are to be made.

THE HYDRAULIC PROPELLER.—Although certainly not so fast as the paddle, the hydraulic propeller makes a vessel so handy and manageable that accidents from collision need never occur. The Germans appear to hold the system in considerable favour. Another hydraulic ship lately built in Germany is 110 ft. long 17 ft. wide, with a draught of 15½ ft. of water, and was expected to attain a speed of 10 knots an hour, but on her trial trip she could barely accomplish 9 knots. She proved, however, to be extremely handy, running close up to a sailing vessel which crossed her course, and then, stopping her way in a moment, turned immediately to starboard. The Ruthven propeller, on this principle, was frequently referred to some 20 years since in the *Mining Journal*. In these hydraulic ships water taken in through the bottom is expelled at both sides in the line of the keel, and the reaction of the fluid issuing at high speed drives the hull ahead if the water is allowed to escape aft, or astern if it escapes toward the bow. The notion is no new one, for as far back as 1661 an inventor received a patent for propelling vessels by expelling water from their sterns. In 1730 another patent was secured for doing nearly the same thing, and since that time nearly 50 persons have taken out patents for hydraulic vessels. It is claimed that for local passenger traffic the hydraulic propeller is without equal.

HYDRAULIC JACKS.—At the Scientific and Mechanical Society of Manchester (Mr. C. S. Allott in the chair), a paper on "Hydraulic Jacks and Punches" was read by Mr. M. Corby. In the paper the author stated that these jacks were made so as to enable one man to lift from 100 to 400 tons. The Great Eastern steamship was launched in 1857, and in 1878 Cleopatra's Needle was raised into position by their application. The Manchester Corporation in laying their system of tramways on Gowan's plan found these jacks invaluable in bending and shaping the heavy rails and fishplates. On the Lancashire and Yorkshire Railway a number of locomotives are supplied with these machines, which would be the means of saving much valuable time in case of accident, as a driver and stoker have been known by means of 2-20 ton jacks to lift and place on the metals a 40-ton locomotive. Some few months ago the Howbridge Spinning Mill was found to be gradually subsiding, but by means of six 50-ton jacks it was raised bodily several inches, the jacks sustaining the whole weight of the structure for a week, whilst the foundations were being excavated and concrete put in. Other interesting accounts of the useful properties of the apparatus were supplied by Mr. Corby, to whom the thanks of the Society were voted.

LEAD ORES.

Date.	Mines.	Tons.	Price per ton.	Purchasers.
Feb. 14—Foxdale.....	100	£13 1 6	Adam Eytan.	
17—West Asheton	20	10 10 6	Walker, Parker, & Co.	
18—South Darren.....	20	15 2 6	Goodhart and Co.	

IN THE MATTER OF THE COMPANIES ACTS 1862 AND 1867, AND IN THE MATTER OF THE EMMA SILVER MINING COMPANY (LIMITED).

THE CREDITORS of the ABOVE-NAMED COMPANY are required, on or before the 4th day of April, 1881, to SEND their NAMES and ADDRESSES, and the PARTICULARS of their DEBTS or CLAIMS, and the names and addresses of their solicitors (if any), to ALEXANDER WILLIAM MAC DOUGALL, the Liquidator of the said company, at the office of the undersigned solicitors to the said liquidator; and, if so required by notice in writing from the said liquidator, are by their solicitors to COME IN and PROVE their said DEBTS or CLAIMS at such time and place as shall be specified in such notice; or, in default thereof, they will be EXCLUDED from the BENEFIT of any DISTRIBUTION made before such debts are proved.
ALEXANDER W. MAC DOUGALL, Liquidator.
FREDK. WM. SNELL and GREENIP, 1, George-street, Mansion House, London, England, Solicitors to the Liquidator.

Dated this 3rd day of February, 1881.

FOREST OF DEAN, GLOUCESTERSHIRE.

MESSRS. BURTON, KNOWLES, AND CO. WILL SELL, BY AUCTION (unless previously disposed of by Private Treaty, of which due notice will be given), at the Bell Hotel, Gloucester, on Saturday, the 5th day of March, 1881, at Two o'clock in the afternoon, those very valuable HOUSEHOLD COAL COLLIERIES and WORKS, well known as

THE PARKEND AND NEW FANCY COLLIERIES.

Situate near Parkend, in the Forest of Dean, within easy reach of the shipping ports of Lydney and Sharpness Dock, and adjacent to and connected with the Severn and Wye and Severn Bridge Railway, and the Forest of Dean Central Railway (Branch of the Great Western Railway).

This valuable property has been lately surveyed and favourably reported on by T. Forster Brown, Esq., Mining Engineer, of Cardiff. Although the actual working of the collieries has been temporarily suspended the pumping has been maintained, and the property may, it is submitted, be looked upon as practically a going concern.

The MINING GROUND comprises an aggregate area of about 1240 acres, and the quantity of marketable coal capable of being raised therefrom is estimated at some 10,000,000 tons.

The property is held under the well known tenure of the Forest of Dean, equivalent to freehold, but subject to moderate royalties to the Crown. The COLLIERIES can be inexpensively drained, and are free from fire-damp. The output in the year 1879 was above 100,000 tons. The COLLIERIES could produce within a few weeks an output of 400 tons per day, which at a very moderate expenditure might be within a short period greatly increased.

The property embraces a manager's house, with stable, outhouses, and other accommodation, and about an acre of land, a bailiff's house, and 35 workmen's cottages with gardens, also enclosed yard and stabling for 20 horses, blacksmith's shop, and other conveniences.

The PLANT will be included in the Sale of the Collieries. The vendors will be prepared to afford purchasers liberal facilities in settling their purchase by allowing a large portion of the purchase money to remain on deferred payments duly secured.

Printed particulars, with plans and any further information, can be obtained of J. W. SULLY, Esq., 78, Queen Victoria-street, London, E.C.; Messrs. SCOTT and BARRHAM, Solicitors, 39, King-street, Cheapside, London; Mr. H. S. SMITH, Solicitor, 8, Staple Inn, London; Messrs. BARRHAM and SON, Solicitors, Bridge-water; Messrs. WINTLE, SON, and MAULE, Solicitors, Newnham, Gloucestershire; and of the Auctioneers, Gloucestershire.

MEDLYN MOOR MINE, WENDRON.

TO BE SOLD, BY PRIVATE CONTRACT, an excellent 40-in. PUMPING ENGINE, 9-ft. stroke, with 10-ton BOILER, and first piece of rod. The above engine is in first-rate condition, and fit for immediate use. For further particulars apply to RICHARD KERRY, jun., Auctioneer, Helston, Cornwall.

NORTH WALES.

PRELIMINARY ANNOUNCEMENT OF SALE OF THE VALUABLE SLATE PROPERTY KNOWN AS THE CROESOR NEW SLATE QUARRY, LLANFROTHERN, MERIONETHSHIRE.

THIS VALUABLE PROPERTY, consisting of about TWO HUNDRED ACRES of QUARRY LAND, with QUARRY WORKS, PLANT, MACHINERY, MILLS, WORKSHOPS, BARRACKS, MANAGERS' HOUSE, and EIGHT WORKMEN'S COTTAGES, will be OFFERED FOR SALE, BY PUBLIC AUCTION, in APRIL next.

The property is held for an unexpired term of 35 years, subject to a nominal dead rent of £1 ls. per annum, and no royalty. The lease contains a covenant for renewal at the end of that term for 20 years at a moderate royalty.

The date of sale and further particulars will appear in future advertisements. For particulars, apply to Mr. J. E. JONES, 16, Bank-place, Portmadoc.

GOOD PUMPING ENGINE.

FOR SALE, a 30-in. cylinder PUMPING ENGINE, with first piece of MAIN ROD. No reasonable offer refused. Address, Mr. WOODWARD, Truro.

WYNAD MINING PROPERTIES.—We are asked to state that, through a printer's error, the extent of property in the annexed advertisement was stated in our last issue to be only 300 acres, instead of three thousand.

THE PROPRIETOR OF OVER THREE THOUSAND ACRES OF LAND in the heart of the Mining District of Wynad, and traversed by at least two auriferous reefs, wishes to SELL ONE HALF or ONE QUARTER INTEREST. As large increase in value is certain the owner does not wish to form a company for next twelve months, hence offers share at 100 per cent. under rates now ruling for similar land. Address, "Madras," Messrs. Simpson and Cullingford, Solicitors, 85, Gracechurch-street, E.C.

POWDER FACTORY AND MAGAZINE TO BE SOLD, LICENSED TO MANUFACTURE EXPLOSIVES, well situated, in the heart of a large Colliery, Mining, and Quarry district, thereby effecting great saving in the cost of carriage. Capital opportunity for the introduction of any new compound, or for established makers to extend their trade. Apply to Mr. F. LIPSHAM, 15, Newgate-street, Chester.

SLATE QUARRY TO BE LET.—Good prospects, and working order, with PLANT. Mr. JOHN HIRD, Ulpha, Broughton-in-Furness, will show and treat.

WIVELISCOMBE, SOMERSET.

TO BE LET, BY TENDER, for a Term to be agreed upon, from Lady-day, 1881, all that EXCELLENT SLATE QUARRY, called OAKHAMPTON QUARRY.

Situate in the parish of WIVELISCOMBE, in the county of Somerset, which for many years past has been worked by the WIVELISCOMBE SLATE COMPANY (LIMITED), whose term expires at Lady-day next. The premises comprise a house for the Manager, and 45 A. 2 R. 37 P. of LAND.

To view the quarry, application to be made to HENRY BELLEW, Esq., of Oakhampton House, Wiveliscombe, the owner; and for further particulars, and to inspect the draft of the proposed lease, apply to Mr. A. K. PAYNE, Solicitor, Milverton, Somerset, to whom Tenders in writing should be sent on or before the 28th day of February, 1881.

Dated Milverton, 11th January, 1881.

COPPER MINE.

FOR SALE, a VALUABLE PROPERTY in PORTUGAL, suitable for either Public or Private Enterprise. HANNAN, WATSON, AND CO., GLASGOW.

TO BE SOLD, BY PRIVATE TREATY, TWO HUNDRED VERY SUPERIOR 8-ton COAL WAGONS, built by OLIVE, of Wigan. For further particulars, apply in writing to "Box 200," MINING JOURNAL Office, 26, Fleet-street, E.C.

TO BE SOLD, a 12 H.P. PATENT "ROBEY" MINING ENGINE, which has only done a few weeks' work, and is in first-class working condition. For particulars and prices, apply to ROBEY and Co., Engineers, Lincoln.

FOR SALE OR HIRE, ONE HUNDRED TO TWO HUNDRED or MORE 3½ and 4-yard END TIP WAGONS; also several 8-in. cylinder TANK LOCOMOTIVES, and other Contractor's Plant, equal to new. Apply, JOHN DICKSON, Jun., or A. C. BETTS, New North Works, Bootle, near Liverpool.

FOR SALE, a SEMI-PORTABLE PIT SINKING, COAL WINDING, and PUMPING ENGINE, double 9½ in. cylinder, fitted with link-motion reversing gear, mounted on a multitubular boiler, with Bowling iron fire-box.

Also WINDING GEAR, drum 5 ft. diameter, brake, and PUMPING GEAR complete, ready for immediate delivery. To be seen at—BARROWS AND STEWART'S WORKS, BANBURY, OXON.

STONE BREAKERS AND RUSHING MACHINERY FOR REDUCING to any degree fineness all kinds of ORES, QUARTZ, COAL, CEMENT, PAINT, &c. Particulars and specifications on application to "Quartz," MINING JOURNAL Office, 26, Fleet-street, London.

COALS.

TENDERS will be received until Two o'clock on TUESDAY, the 22nd instant, for the SUPPLY to H.M. Dockyards, Victualling Yards, Royal Marine Barracks, Royal Naval Hospitals, &c., of LAND ENGINE, FURNACE, METAL MILLS, SMITHERY, BAKERY, and HOUSEHOLD COALS and of COKE.

Forms of Tender, containing Conditions of Contract, and all particulars, may be obtained on personal application at this office; or by letter, addressed "Director of Navy Contracts, Admiralty, Whitehall, S.W." JOHN COLLETT, Director of Navy Contracts. Contract Department, Admiralty, Whitehall, S.W., Feb. 4, 1881.

LEASING OF IRON MINES IN TUSCANY (ITALY).

NOTICE IS HEREBY GIVEN, that TENDERS will be RECEIVED at the Intendenza di Finanze, in Rome, Leghorn, and Genoa on the 7th March next, for the TRIENNIAL LEASING of the IRON MINES in the Island of Elba, and of the IRON FOUNDRIES in Follonica, Cecina, and Valpiana, and also the IRON-PRODUCING DISTRICTS in the Island of Giglio, the use of the Mines situated at Pruno, in the district of Pietrasanta, with all the privileges belonging to the Government machinery, &c., &c. All details and Conditions of Tender may be seen at the Italian Consulate.

ROBERT A. HEATH, Italian Consul General. No. 31, Old Jewry, City, London, 16th February, 1881.

THE CORNISH STEEL IRON ORE COMPANY.

THE CORNISH STEEL IRON ORE COMPANY hereby give notice that having from this day ceased to hold any interest in the Duchy Peru Mine their offices have been REMOVED to NEW QUAY, CORNWALL, where it is requested all communications may be addressed to the manager—

J. WHITAKER BUSHE, p.p. The Cornish Steel Iron Ore Company. DUNCAN MACGREGOR, Sole Proprietors. New Quay, Cornwall, Feb. 4, 1881.

CALIFORNIA GOLD MINES COMPANY (LIMITED). Notice is hereby given, that the SUBSCRIPTION LISTS for the shares of the above company WILL CLOSE for LONDON and the COUNTRY on THURSDAY NEXT, the 24th inst.

J. CRUKSHANK, Secretary. 19a, Palmerston Buildings, London E.C.

CALIFORNIA GOLD MINES COMPANY (LIMITED). Notice is hereby given, that Mr. THOMAS RICKARD, of the firm of Rickard Brothers, 35, Queen Victoria-street, London (which firm includes the well known Superintendent of the Richmond Consolidated Mine), having joined the board, has consented to GO OUT to COLORADO to see to the LEGAL TRANSFER of the PROPERTY, and take measures for the VIGOROUS WORKING and DEVELOPING of the mine.

No money will be paid on account of the purchase until Mr. Rickard's report is received confirming the statements made in the prospectus. Mr. Rickard sails from Liverpool on Saturday, February 17, 1881. J. CRUKSHANK, Secretary.

CALIFORNIA GOLD MINES COMPANY (LIMITED). Notice is hereby given, that Mr. JOHN ELLIOT (late Chairman of the Richmond Consolidated Mine) has agreed to JOIN the BOARD of the above company. J. CRUKSHANK, Secretary.

CALIFORNIA GOLD MINES COMPANY (LIMITED). Notice is hereby given, in answer to many enquiries, that the company's property is situated in COLORADO, and not in CALIFORNIA, on Quartz Hill, Gilpin County, the richest gold bearing district in the State.

Messrs. Wells, Fargo, and Co.'s last annual report of the precious metals produced west of the Missouri River, including British Columbia, and the West Coast of Mexico, shows in the aggregate—gold, \$33,522,182; silver, \$40,005,364; lead, \$8,752,390; copper, \$898,900. Colorado taking the lead with a total of \$20,284,389. J. CRUKSHANK, Secretary.

LA PLATA MINING AND SMELTING COMPANY. THE EIGHTEENTH CONSECUTIVE MONTHLY DIVIDEND.

The Board of Directors have DECLARED a DIVIDEND of \$15,000—SEVEN AND A HALF CENTS PER SHARE—out of the profits for the month of January, PAYABLE on 1st March, leaving at credit of Reserve Fund, \$53,940.85. THEODORE BERDELL, Vice-President. 21, Great Winchester-street, London, E.C., 17th February, 1881.

MINE "EL CALLAO," GUAYANA, VENEZUELA. COUPONS ON SHARES..... 322

Gold in bars produced in the month of December, 1880, and re-mitted to Messrs. Baring Brothers and Co., London, 5308.77 ozs. DIVIDEND distributed for each coupon, \$100.

(Signed) A. LICCONI, President.
(Signed) VICTOR T. GRILLET, Treasurer.

ALEXANDER SMITH, M.Inst.C.E., CONSULTING ENGINEER and VALUER of IRONWORKS, MINING, RAILWAY, ENGINEERING, and other PROPERTY, PLANT, and MACHINERY, 1, PRIORY STREET, DUDLEY.

Mr. SMITH has been retained for nearly 20 years by some of the most prominent firms, and has conducted many of the largest valuations that have taken place in the kingdom.

Valuations for Stock Taking or any other purpose upon very reasonable terms.

FIRE AND STORM-PROOF IRON ROOFING.—VERY STRONG and FIRST-CLASS IRON ROOFS, up to 50 feet span erected complete, just now much under usual prices, from special lots; also 220 TONS MATERIALS in stock, admirably suited for IRONWORKS, FORGES, ROLLING MILLS, COLLIERIES, IRON FOUNDRIES, SHIP-BUILDING YARDS, ENGINEERS' SHOPS, WAREHOUSES, WORKSHOPS, and MANUFACTURING, AGRICULTURAL, and OTHER PURPOSES.

Also COMPLETE IRON BUILDINGS, all sizes, cheap; about 12,000 GALVANISED CORRUGATED SHEETS, various lengths, 25 gauge, at 2d. per superficial foot—£10 lots delivered free. Apply to—ISAAC DIXON, WINDSOR IRON WORKS, LIVERPOOL.

J. S. MERRY.

ASSAYER AND ANALYTICAL CHEMIST SWANSEA

SUPPLIES ASSAY OFFICE REQUIREMENTS AND RE-AGENTS.

Just published, demy 8vo, with 137 illustrations, 15s. cloth (postage 8d.)

MINE DRAINAGE.—A Complete and Practical Treatise on Direct-Acting Underground Steam Pumping Machinery for Collieries and Mines. By STEPHEN MICHELL. Joint Author of Essays on "The Cornish System of Mine Drainage." CROSBY LOCKWOOD and Co., 7, Stationers' Hall-court.

MINING SHARES, AND HOW TO DEAL IN THEM. Published for the Author at the MINING JOURNAL Office, 26, Fleet-street, E.C.

Just Published, post free 1½ stamps. "SOW AND REAP."—A Monthly for Investors. Contains highly interesting information on Stocks, Shares, and Mining Matters, Gold in Cornwall, A New Cornish Industry, The Stock Exchange, The Metal Trade, Highly Profitable Investments and Recommendations. Published by THOMPSON and SON, 14, Old Town Street, Plymouth

THE UNDERSIGNED, having secured the Grants of several VALUABLE MINERAL PROPERTIES (TIN AND COPPER), in the St. Blazey District, in the vicinity of Fowey Consols, &c., is DESIROUS of OBTAINING the CO-OPERATION of CAPITALISTS for their EXPLORATION. There is little or no risk involved in the undertakings, and the capital required in each case is very limited. R. SYMONS. 11, Parade, Truro, 3rd February, 1881.

MAP OF CALLINGTON, CALSTOCK, AND TAVISTOCK MINING DISTRICTS.

Proposed to be published by subscription, a MAP of the ABOVE DISTRICTS, showing the names and boundaries of all existing settlements, lodges, cross-roads, and every other matter which such a map should contain. Persons disposed to patronise the publication—at One Guinea per copy—will please send their names as early as possible to me. R. SYMONS, Mineral Surveyor, Truro. February 3rd 1881.

Just published, cloth limp, price 1s. 6d.,

THE COLLIERY READY-RECKONER AND WAGES CALCULATOR.

By JAMES IRELAND

"Will be the means of preventing many disputes between pay clerks and colliers."—*Mining Journal*

To be had on application at the MINING JOURNAL Office, 26, Fleet-street, E.C.

CAPTAIN ABSALOM FRANCIS, M.E.

GOGINAN, ABERYSTWITH.



PARIS EXHIBITION, 1878.

GOLD AND SILVER MEDALS AWARDED for
Steam-Engines & Boilers, also the Special Steam Pump,
and Compound Pumping Engine.

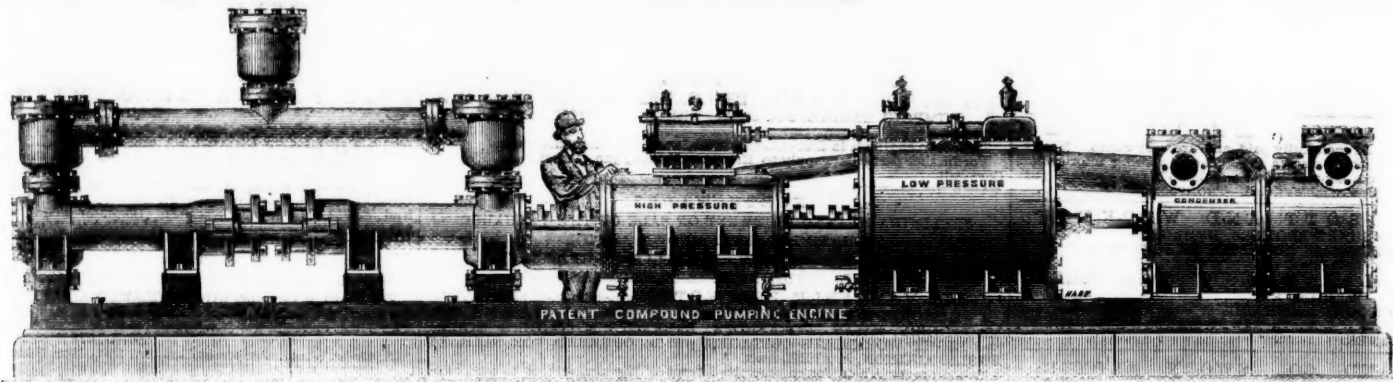


TANGYE BROTHERS AND HOLMAN,

CORNWALL HOUSE, 35, QUEEN VICTORIA STREET, LONDON, E.C.,
AND BIRMINGHAM, (TANGYE BROTHERS), CORNWALL WORKS, SOHO.

TANGYE'S DIRECT-ACTING
COMPOUND PUMPING ENGINE,

For use in Mines, Water Works, Sewage Works,
And all purposes where Economy of Fuel is essential.



TANGYE'S DIRECT-ACTING COMPOUND PUMPING ENGINE, WITH AIR-PUMP CONDENSER.

TANGYE'S COMPOUND PUMPING ENGINE COMBINES SIMPLICITY, CERTAINTY OF ACTION, GREAT ECONOMY
IN WORKING, COMPACTNESS, AND MODERATE FIRST COST.

This Engine will be found the most simple and economical appliance for Mine Draining, Town Water Supply, and General Purposes of Pumping ever introduced, and as regards Mine Draining, the first cost is very moderate compared with the method of raising water from great depths by a series of 40 or 50 fm. lifts. No costly engine-houses or massive foundations, no repetition of plunger lifts, ponderous connecting rods, or complication of pitwork, are required, while they allow a clear shaft for hauling purposes. In this Engine the economical advantages resulting from the expansion and condensation of steam are very simply and effectively obtained. The steam after leaving the high-pressure cylinder is received into and expanded in the low-pressure cylinder, and is thus used twice over before being exhausted into the condenser or atmosphere.

The following first-class Testimonials will bear evidence as to the efficiency and economy of the Engine:—

TESTIMONIALS OF TANGYE'S COMPOUND PUMPING ENGINE.

21' Newcastle and Gateshead Water Company, Newcastle-on-Tyne, Oct. 20, 1879.
36" x 10" x 48" COMPOUND CONDENSING STEAM PUMPING ENGINE.

Messrs. Tangye Brothers.

GENTLEMEN,—In reply to your enquiry as to the efficiency of the two pairs of Compound Condensing Engines recently erected by you for this company at our Gateshead Pumping Station, I have great pleasure in informing you that they have far surpassed my expectations, being capable of pumping 50 per cent. more water than the quantity contracted for; and by a series of experiments I find they work as economically as any other engine of the compound type, and will compare favourably with any other class of pumping engine. By the simplicity of their arrangement and superior workmanship they require very little attendance and repairs, and the pumps are quite noiseless. A short time ago I had them tried upon air by suddenly shutting off the column, and found they did not run away, thus showing the perfect controlling or governing power of the Floyd's Improved Steam-moved Reversing Valve. I will thank you to forward the other two pairs you have in hand for our Benwell Pumping Station.

(Signed)

Yours respectfully,
JOHN R. FORSTER, Engineer.

The Chesterfield and Boythorpe Colliery Company (Limited),
Registered Office, Boythorpe, near Chesterfield, Oct. 1, 1879.

21"

36" x 12" x 48" DOUBLE RAM COMPOUND CONDENSING STEAM PUMPING ENGINES.
Messrs. Tangye Brothers. Supplied in January, 1878.

GENTLEMEN,—Referring to the above, which we have now had working continuously night and day for the last 12 months, we are glad to say that it is giving us every satisfaction. It is fixed about 400 feet below the surface, the steam being taken down to it at pressure of 45 lbs. per square inch. We can work the pump without any difficulty at 28 strokes per minute—224 ft. piston speed. The pumping power is enormous. The vacuum in the condenser being from 11½ to 13 lbs. The pump is easily started, and works well and regularly. The amount of steam taken being much less than we anticipated. We consider the economy in working very satisfactory indeed. The desire for power and economy at the present day will certainly bring this pump into great requisition.

Yours truly,
(Signed)

M. STRAW, Manager.

SIZES AND PARTICULARS.

Diameter of High-pressure Cylinder.....In.	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14
Ditto of Low-pressure Cylinder.....In.	14	14	14	18	18	18	18	21	21	21	21	24	24	24	24
Ditto of Water Cylinder.....In.	4	5	6	5	6	7	8	6	7	8	10	7	8	10	12
Length of stroke.....In.	24	24	24	24	24	24	24	24	24	24	24	36	36	36	36
Gallons per hour approximate.....	3900	6100	8800	6100	8800	12,000	15,650	8,800	12,000	15,650	24,450	12,000	15,650	24,450	35,225
Height in feet water can be raised with 40 lbs. pressure per square inch in } Non-condensing...	360	330	160	360	250	184	140	360	264	202	130	360	275	175	122
Ditto ditto ditto—with Holman's Condenser...	480	307	213	480	333	245	187	480	352	269	173	480	367	234	162
Ditto ditto ditto—with Air-pump Condenser...	600	384	267	600	417	306	335	600	440	337	216	600	459	203	203

CONTINUED.

Diameter of High-pressure Cylinder.....In.	16	16	16	16	18	18	18	18	21	21	21	24	24	24	30	30
Ditto of Low-pressure Cylinder.....In.	28	28	28	28	32	32	32	32	36	36	36	42	42	42	52	52
Ditto of Water Cylinder.....In.	8	10	12	14	8	10	12	14	10	12	14	10	12	14	12	14
Length of stroke.....In.	36	36	36	36	48	48	48	48	48	48	48	48	48	48	48	48
Gallons per hour approximate.....	15,650	24,450	35,225	47,950	13,650	24,450	35,225	47,950	24,450	35,225	47,950	24,450	35,225	47,950	35,225	47,950
Height in feet water can be raised with 40 lbs. pressure per square inch in } Non-condensing...	560	250	160	118	456	292	202	149	397	276	202	518	360	264	562	
Ditto ditto ditto—with Holman's Condenser...	480	307	213	154	603	389	269	198	528	363	269	691	480	352	750	
Ditto ditto ditto—with Air-pump Condenser...	600	384	267	191	750	486	337	248	660	450	337	864	600	440	937	

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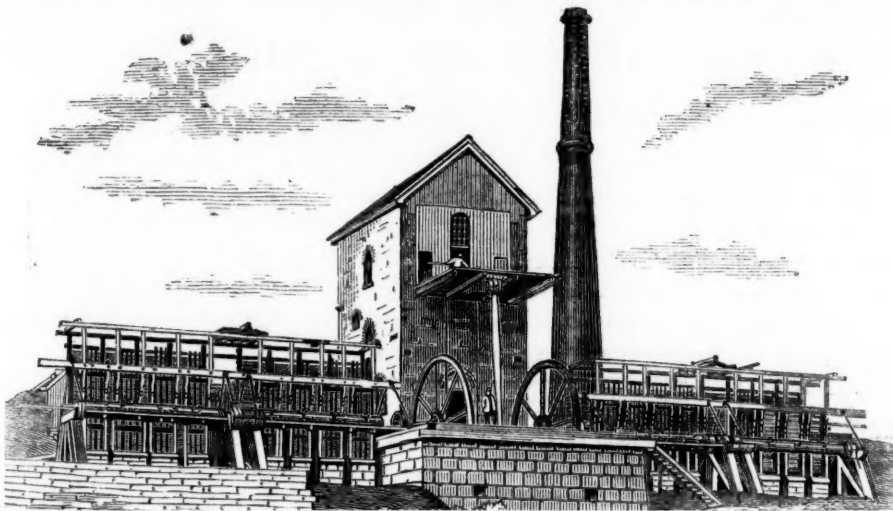
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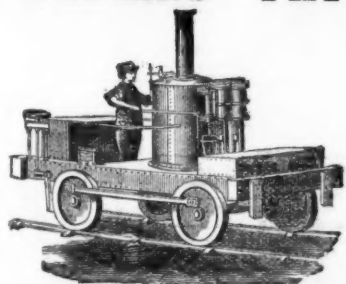
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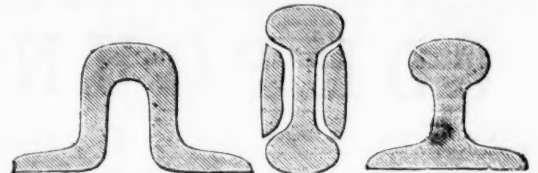
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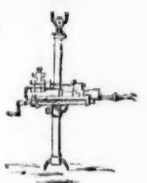
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13000 Caradon, t, c, St. Agnes	56 7 0	120 1/2	117 1/2	120 308 3	0 1 0	0 1 0	0 1 0	0 1 0	0 1 0
10000 Caradon, t, c, St. Agnes	1 0 0	14 1/2	13 1/2	118 7	0 0 6	0 0 6	0 0 6	0 0 6	0 0 6
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30000 East Craven Moor, t, c, Pateley Bdg.	1 0 0	1 1/2	1 1/2	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
6400 East Pool, t, c, St. Agnes	0 9 0	35	34 3/5	21 17 9	1 0 0	0 0 0	0 0 0	0 0 0	0 0 0
12500 Frongoch, t, c, St. Agnes	2 0 0	4 1/2	4 1/2	0 4 0	0 2 0	0 2 0	0 2 0	0 2 0	0 2 0
40000 Glas. Car. t, c, St. Agnes	15 0 0	1 1/2	1 1/2	0 13 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
7500 Gossard and Merilyn Con., t, Flint	2 10 0	3 1/2	2 3/4	0 5 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
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6400 Green Hurl, t, c, St. Agnes	0 0 0	6 1/2	6 1/2	0 14 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
20000 Grosvenor, t, c, St. Agnes	0 0 0	3 1/2	3 1/2	0 16 4	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
10240 Grogynslake (Clitters), t, c, St. Agnes	2 2 0	5 1/2	4 1/2	0 14 9	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
2800 Isle of Man, t, c, St. Agnes	25 0 0	0	0	83 5	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
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4000 Lisleburn, t, c, St. Agnes	18 15 0	0	0	605 10	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
10000 Melanear, c, Hayle	2 0 0	5	5 1/2	1 3	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
9000 Minera Mining Co., t, Wrexham	5 0 0	10	9 1/2	0 59 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
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80000 Mona, t, c, St. Agnes	0 0 0	15 1/2	14 1/2	0 10 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
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11829 North Hendre, t, c, St. Agnes	2 10 0	6 1/2	6 1/2	0 3 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
8146 Ditto	1 5 0	3 1/2	3 1/2	0 7 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
2000 North Levant, t, c, St. Agnes	13 6 0	6 1/2	6 1/2	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
5000 Penhalls, t, c, St. Agnes	3 17 6	2 1/2	2 1/2	0 3 17 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
6000 Pennant, t, c, St. Agnes	5 0 0	5	5	0 10 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
12000 Phoenix United, t, c, St. Agnes	5 10 0	2 1/2	2 1/2	0 2 6	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
18000 P. Patrick, t, c, St. Agnes	1 0 0	0	0	3 15 8	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
10000 Red Rock, t, c, St. Agnes	2 0 0	2 1/2	2 1/2	0 6 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
12000 Rodman Gravel, t, c, St. Agnes	7 10 0	10 1/2	10 1/2	0 5 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
4000 Rhydalun, t, c, St. Agnes	10 0 0	0	0	0 5 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
512 South Canadon, t, c, St. Agnes	1 5 0	60	57 1/2	749 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
6123 South Canadon, t, c, St. Agnes	6 5 0	10 1/2	10 1/2	8 2	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
9000 South Darren, t, c, St. Agnes	1 10 0	2 1/2	2 1/2	0 4 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
4500 South Wheel Franchises, t, c, St. Agnes	7 12 4	11	9 9/4	40 15 6	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
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6000 Tincroft, t, c, St. Agnes	11 10 0	21	19 21	50 8	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
15000 Van, t, c, St. Agnes	4 5 0	16	15 1/2	25 3	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
3000 West Chiverton, t, c, St. Agnes	20 5 0	1/2	1/2	55 10	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
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1200 West Wheel Franchises, t, c, St. Agnes	26 10 0	21	17 19	223 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
6000 West Basset, c, St. Agnes	7 0 0	13 1/2	12 13	27 2	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
12000 Wheel Crebore, t, c, St. Agnes	2 4 0	4 1/2	4 1/2	0 7 9	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
1024 Wheel Eliza Consols, t, c, St. Agnes	18 0 0	0	0	42 10	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
6000 Wheel Grenville, t, c, St. Agnes	15 0 0	10 1/2	10 1/2	0 7 6	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
4295 Wheel Kitty, t, c, St. Agnes	5 4 0	4	3 3 1/2	12 18 6	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
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20000 Australian, c, South Australia	7 7 6	1 1/2	1 1/2	1 5 6	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
15000 Birdseye Creek, c, California	4 0 0	2	1 1/2	0 16 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
20000 Casa Copper Mining, t, South Africa	7 0 0	43	41 43	40 7 6	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
35000 Caspian Sulph. Co., Romania, Italy	10 0 0	0	0	1 1 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
100000 Chiriqui, c, Chile (200 shares)	17 0 0	14 1/2	14 1/2	8 3 11	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
23500 Eberhard and Aurora, c, Nevada	10 0 0	3 1/2	3 1/2	1 8 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
70000 English and Australian, t, c, S. Aust.	2 10 0	1 1/2	1 1/2	2 18 9	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
25000 Fortuna, t, Spain	2 0 0	6	6 1/2	15 5	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
60000 Frontino and Bolivia, c, New Gran.	2 0 0	6 1/2	6 1/2	0 3 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
200000 La Plata, t, Leadville	2 0 0	1 1/2	1 1/2	0 5 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
15000 Linares, t, Spain	3 0 0	6 1/2	6 1/2	18 10 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
60000 New Quebrada, c, Venezuela	5 0 0	6 1/2	6 1/2	0 2 6	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
1000 Ditto, Debentures	100 0 0	100	95 100	6 per cent.	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
3000 Oregon, c, Oregon, U.S. (pref. sh.)	4 0 0	0	0	0 2 6	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
50000 Pampulillo, c, Chile	4 0 0	6 1/2	6 1/2	0 2 6	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
25000 Pitangui, c, Brazil (in 6000 £1 pd.)	0 10 0	0	0	0 1 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
10000 Ponteland, t, France	20 0 0	17	15 17	23 7	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
100000 Port Phillip, c, Chile (22 shares)	1 0 0	16 1/2	16 1/2	11 6	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
84000 Richmond Consol., c, Nevada	1 0 0	16 1/2	16 1/2	11 6	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
1858880 Rio Tinto, c, S. Comp. Bds., Huvela	10 0 0	101	99 101	5 per cent.	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
225000 Ditto, shares	10 0 0	24	24 25	0 18 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
40000 Santa Barbara, c, Brazil	0 10 0	2	1 1/2	0 10 9	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
120000 Scottish-Australian Mining Co., t	1 0 0	2 1/2	2 1/2	15 p. cent.	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
80000 Ditto, New	0 10 0	1 1/2	1 1/2	15 p. cent.	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
500000 Seintin, t, c, bl, Arige, France	1 0 0	0	0	0 2 3	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
22500 Sierra Buttes, c, California	2 0 0	1 1/2	1 1/2	2 6	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
40625 Ditto, Plumas Eureka	2 0 0	2 1/2	2 1/2	2 10	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
250000 St. John del Rey (45 stock and multiples dealt in)	2 0 0	270	270	12 1/2 p. cent. for half year June 1880	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
20000 Tolima, c, Colombia	5 0 0	0	0	1 11 9	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
25000 Victoria (London), c, Australia	1 0 0	0	0	0 13 10	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
15000 Western Andes, c, Colombia	5 0 0	0	0	2 18 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
2100 W. Prussian (5500 pref. sh. £10 pd.)	10 0 0	10 1/2	10 1/2	3 14 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0

† Have made calls since last dividend was paid.

NON-DIVIDEND BRITISH MINES.

Shares.	Paid.	Last wk.	Clos. pr.
25600 Aberllyn, t, bl, Carnarvon	1 0 0	1 1/2	1 1/2
30000 Alston United, t, c, Cumberland	1 0 0	1 1/2	1 1/2
12000 Ashton, t, c, Carnarvonshire	5 0 0	1 1/2	1 1/2
10000 Atlantic, c, t, (res. shares 28,000)	1 0 0	1 1/2	1 1/2
36000 Basset & Buller Cons., t, c, t, Illogan	1 0 0	1 1/2	1 1/2
11583 Bedford Unit, t, c, Tavis, (£1 liab.)	0 0 0	1 1/2	1 1/2
25000 Belovoda, t, c, Roche	1 0 0	1 1/2	1 1/2
30000 Bertwys-y-Coed, t, c, (20000 sh. issued)	1 0 0	1 1/2	1 1/2
8000 Blaen Caplan, t, c, Carnarvon	3 0 0	1 1/2	1 1/2
30000 Bodirris, t, c, bl, Denbighshire	1 0 0	1 1/2	1 1/2
800 Botallack, t, c, St. Just	31 10 0	1 1/2	1 1/2
10000 British, t, c, Wrexham	2 0 0	1 1/2	1 1/2
20000 Bwlch United, t, c, Cardigan	0 17 6	2 1/2	2 1/2
50000 Cambrian, t, c, c, Cardiganshire	2 0 0	2 1/2	2 1/2
6000 Carn Camborne, c, c, Camborne	0 2 6	4 1/2	4 1/2
20000 Carnarvon, t, c, Carnarvonshire	1 0 0	1 1/2	1 1/2
20000 Central Foxdale, t, c, L. of Man (22 sh.)	1 17 6	1 1/2	1 1/2
5120 Clemenstine, t, c, Llanrwst	1 0 0	1 1/2	1 1/2
25000 Coed Mawr Pool, t, c, Carnarvon	2 0 0	1 1/2	1 1/2
2450 Cook's Kitchen, t, Illogan	29 14 9	10 1/2	10 1/2
15500 Court Grange United, t, c, t, c	1 0 0	1 1/2	1 1/2
6400 Crook Burn, t, c, Cumberland	0 10 0	1 1/2	1 1/2
14000 Crosswood Mining Lands, t, c	1 0 0	1 1/2	1 1/2
15000 Cwm Dyfwr, t, c, c, Carnarvon	1 0 0	1 1/2	1 1/2
25000 Cwm Pryf, t, c, Cardiganshire	1 0 0	1 1/2	1 1/2
20000 Deep Level, t, c, Flintshire	1 0 0	1 1/2	1 1/2
1280 D'Eresby Consols, t, c, bl, Carnarvon	10 0 0	1 1/2	1 1/2
1536 D'Eresby Mountain, t, c, bl, Llanrwst	20 0 0	50	40 50
20000 Denbighshire Consolidated, t, c	0 0 0	3	2 3
12000 Derwent, t, c, Durham	4 0 0	2 1/2	2 1/2
100000 Devon, t, c, bl, Tavis, (125000 iss.)	0 1 0	2s. 0d.	2s. 4d.
60000 Devon Friendship, t, c, Tavis, (22 shares)	1 0 0	1 1/2	1 1/2
12000 Devon Great United, t, c, (22 shares)	1 0 0	2 1/2	2 1/2
20000 Devonshire, t, c, t, Lydford	1 0 0	1 1/2	1 1/2
10000 Dobby Syke, t, c, Durham	0 19 6	7 1/2	7 1/2
6000 East Botallack, t, c, St. Just	0 4 0	1 1/2	1 1/2
6144 East Canadon, t, c, St. Cleer	3 14 6	2 1/2	2 1/2
4000 East Chiverton, t, c, Perranzabuloe	9 14 9	2 1/2	2 1/2
12000 East Crebore, t, c, Tavis, (22 shares)	0 7 6	3 1/2	3 1/2
15000 East Devon Cons., t, c, Buckfastleigh	2 0 0	3 1/2	3 1/2
12000 East Herodsfoot, t, c, Liskeard	nil	1 1/2	1 1/2